Chemical Week

January 5, 1957

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Steel and coal-chemical expansion won't get government aid. Here's what it means to you . . . . p. 21

Europe's chemical exports and imports are rising—but exports are rising faster . . . . . p. 30

Need microanalysts? This consulting firm trains them for customers . . . . . p. 34

Liquefied petroleum gas sales are booming. Production hit 7 million gal. in '56 . . . . . p. 40

Ocean shipping will cost more, but a court decision may damp the Suez-sparked rate boom . . p. 56

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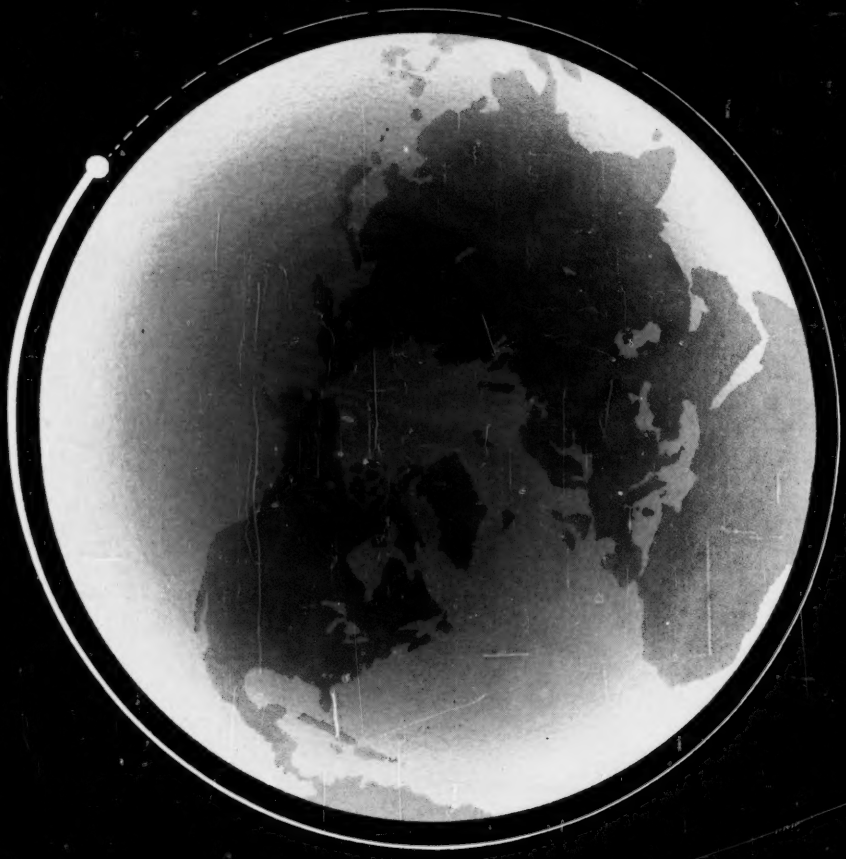

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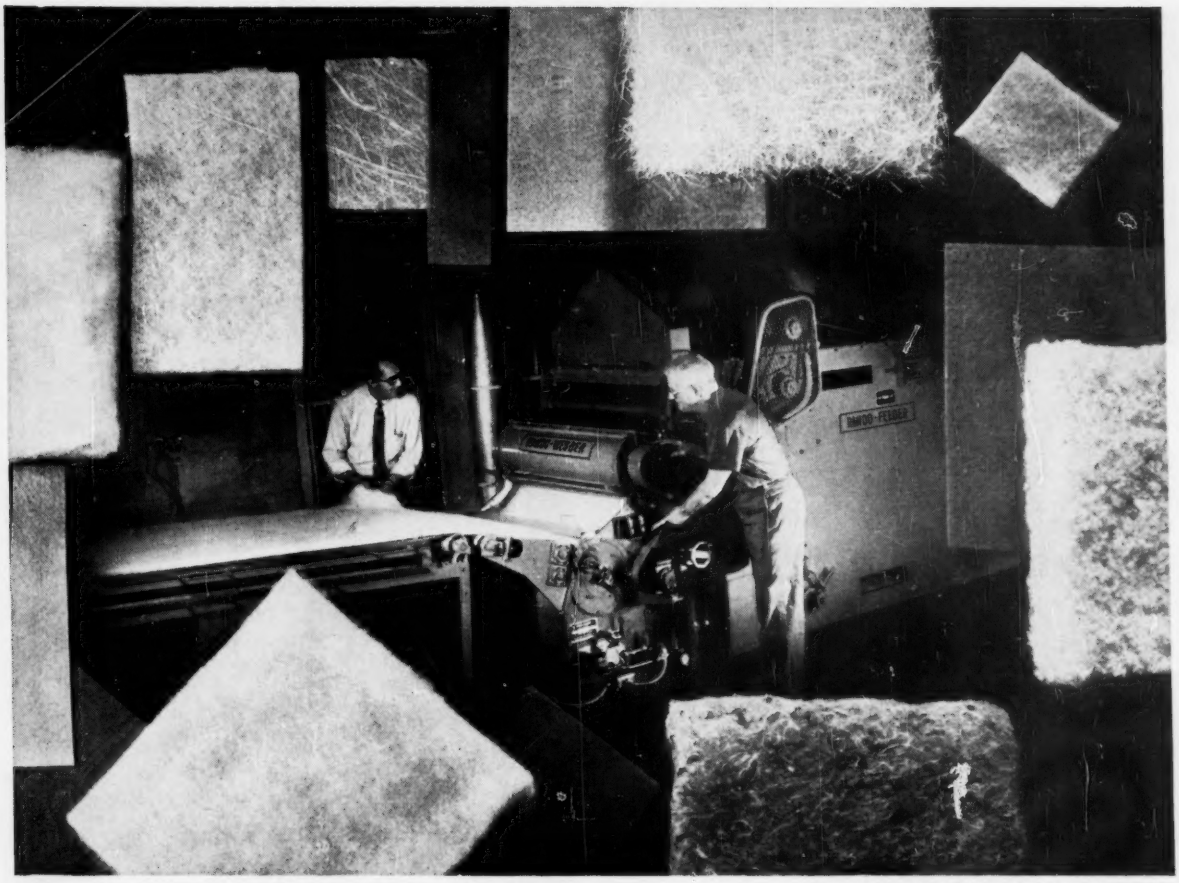

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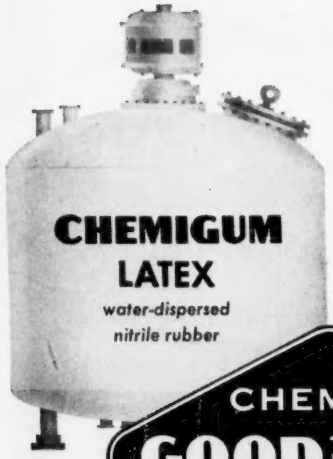
Waste not, want not — 1957 style!



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Chemical Week

TOP OF THE WEEK

January 5, 1957

This is what's behind the 'preplanned' switch in Nuclear-Chicago's top management team ..... p. 22

G. D. Searle has had 50% pretax earnings for the past six years. Can it keep up the record? ..... p. 23

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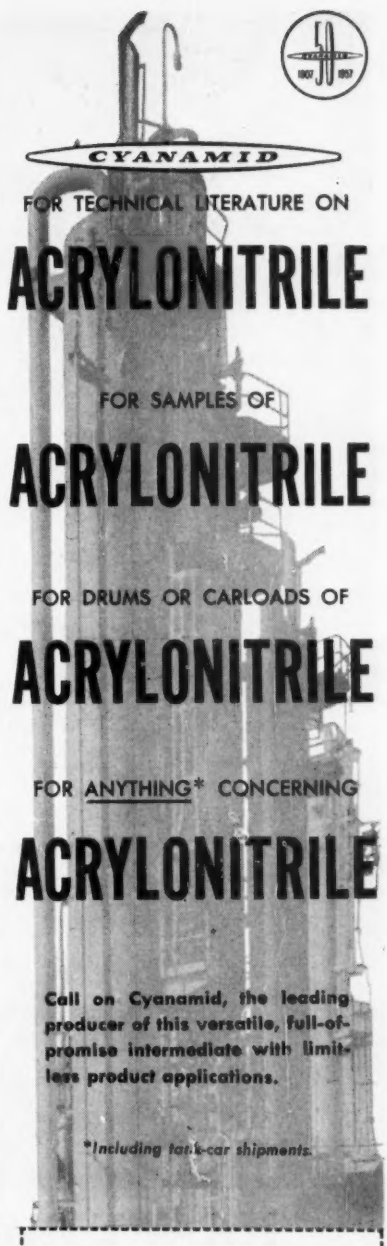
Here's how Continental handled production job on hot, new aerosol product



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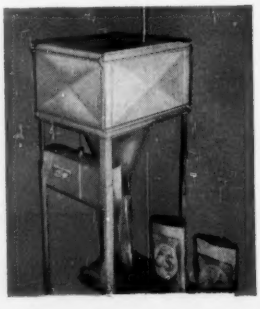

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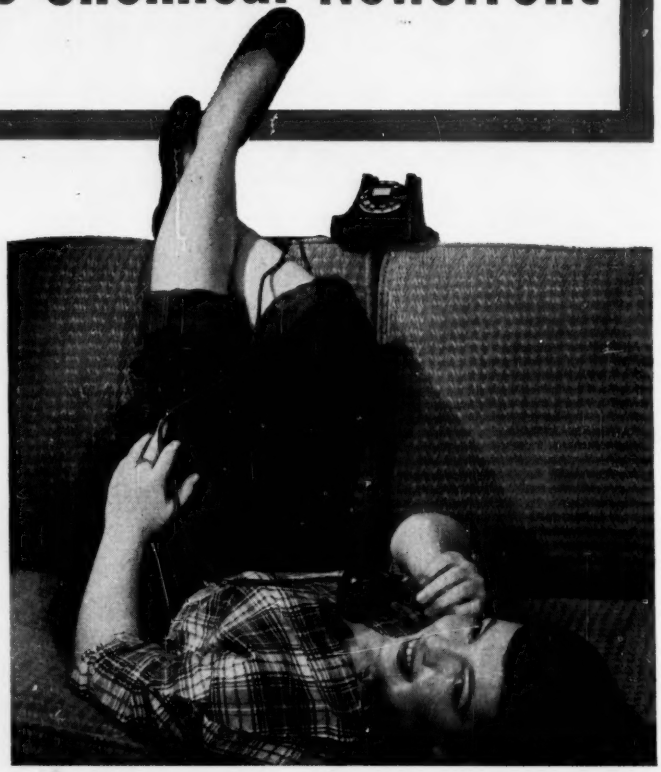
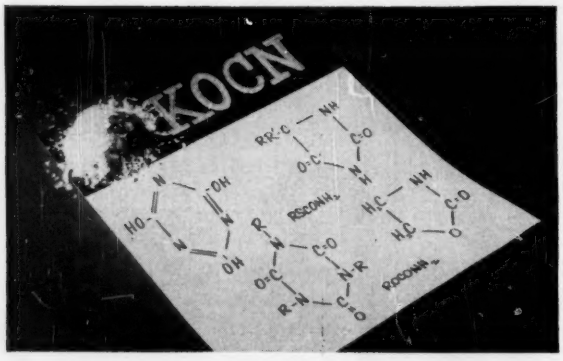
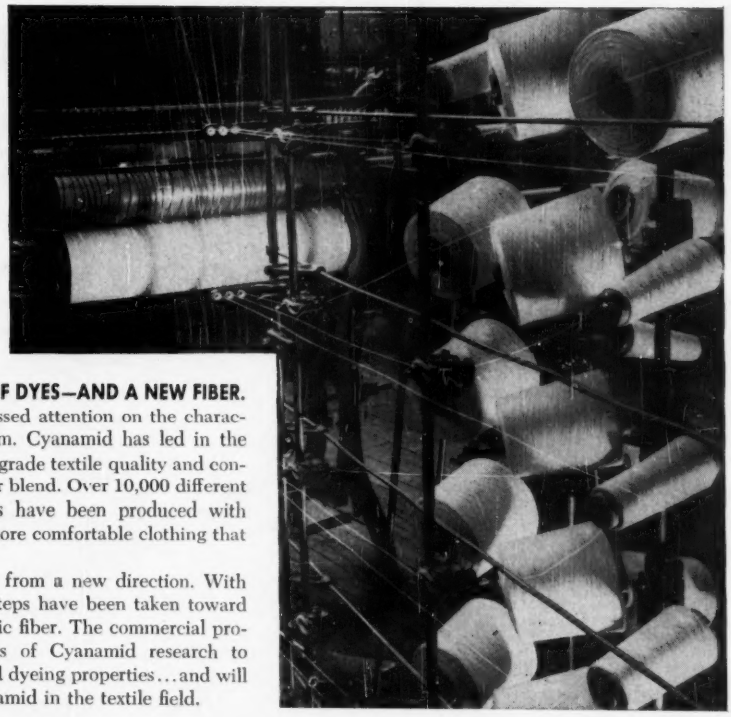


SOFTER, MORE COMFORTABLE DENIMS have made possible a style trend toward the use of this fabric for casual wear. This is only one application of Cyanamid's No-Odorol® sulfonated oil which softens and gives a full, smooth, well-lubricated hand to cotton, rayon and synthetic fabrics of various constructions. With the advent of the rubber-belt shrinking process, vegetable-base softeners are replacing mineral-base products to prevent damage to the rubber belts. No-Odorol has high resistance to discoloration and odor development, and may be used along with most commonly used textile finishes. In addition to imparting softer feel to off-the-loom fabrics, and a soft absorbency to toweling, it lubricates knitting yarns, and aids the sewing and cutting of piece goods. **(Organic Chemicals Division)**



AN OLD-TIMER IS REBORN on a commercial scale. It's Potassium Cyanate, which was used in 1828 by Dr. F. Wohler in his historic preparation of urea... the first synthesis of an "organic" chemical. Synthetic organic chemistry has become a giant industry, but Potassium Cyanate has just recently made its debut as a chemical of commercial importance. Cyanamid now produces large quantities at a price permitting application in a wide range of agricultural, pharmaceutical and industrial products. Among the initial reaction products of Potassium Cyanate are isocyanates, substituted ureas, hydantoins, triazines and many other intriguing heterocyclics and acyclics. **(New Product Development Department)**

VITAMINS JOIN CREAM AND SUGAR on the dinner table, thanks to a new packaging development of Cyanamid's Lederle Laboratories Division. Recognizing the widespread use of vitamin-mineral supplements as "preventive maintenance," Lederle now packages Gevral® geriatric vitamin-mineral capsules in attractive apothecary-style jars which can find a permanent place on the dining table. Their ready convenience aids greatly in maintaining adequate levels of vital chemicals in the diets of adults and children. Research has shown that some vitamins act as "triggers" for others and a general supplement type, such as Gevral, is desirable even when deficiencies are suspected to be specific. **(Lederle Laboratories Division)**



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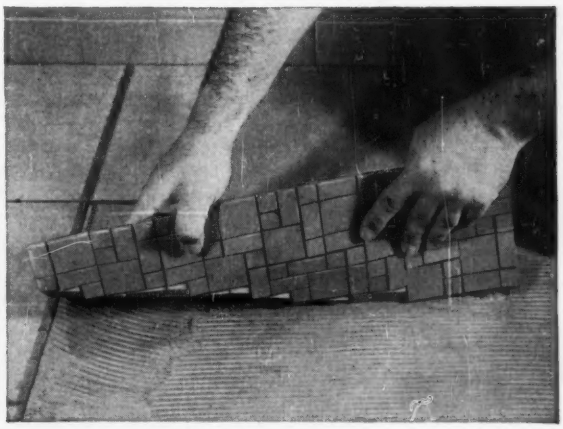

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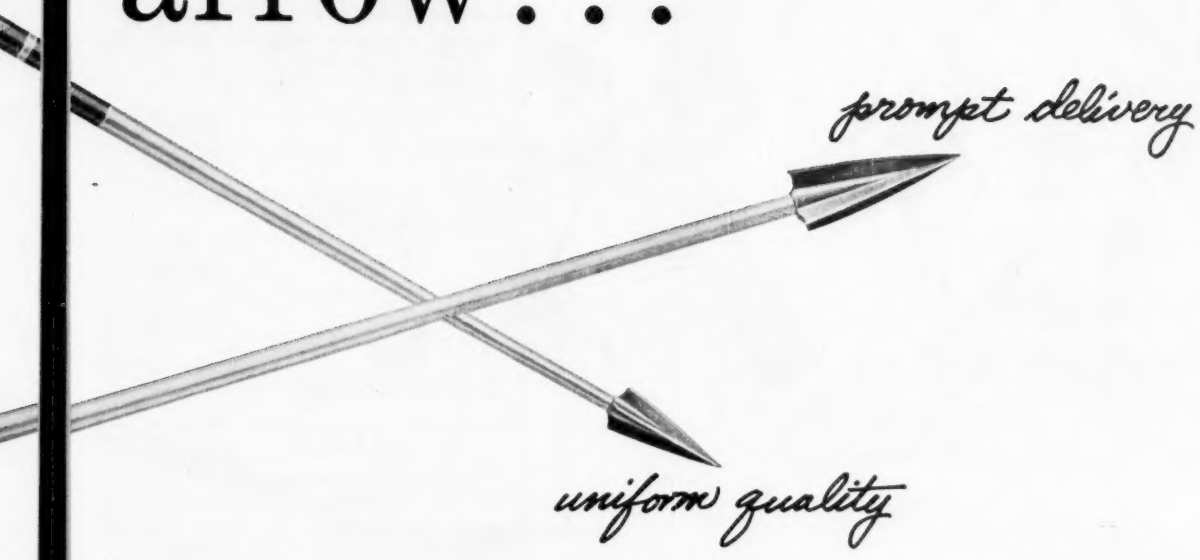

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OPINION

'Complicated Industry'

To THE EDITORS [Re] . . . your series of articles on the pesticides industry. It is certainly a comprehensive review.

We noticed a few minor corrections in the producer list, which you might like to note for future reference. Although the companies that you list have produced lindane at one time or another in at least pilot-plant quantities, Hooker is believed to be the only actual producer today. In addition to Rohm & Haas, General Chemical has produced TDE for several years. . . .

You have certainly done an excellent job in summarizing the status of a complicated industry.

JOHN F. KIRK
Vice-President
Velsicol Chemical Corp.
Chicago

Capital Captan

TO THE EDITOR: Many of us at Stauffer have been impressed by the extraordinarily thorough reports you have been publishing on pesticides. Indeed, I feel that both the author, Carl Fischer, and you are to be congratulated on the contribution you have made to the industry. I venture to say that these CW REPORTS may well come to be recognized as benchmarks.

I hope, however, that you will understand that necessity dictates that I also append this other small comment. In the Nov. 17 section (*p. 74*), you thoughtfully and correctly included Stauffer as a producer of captan. However, you do not include our trademark, which is Captan 50-W.

This is certainly understandable, but I felt that you would like to have the record straight. The word—captan

CW welcomes expressions of opinion from readers. The only requirements: that they be pertinent, as brief as possible.

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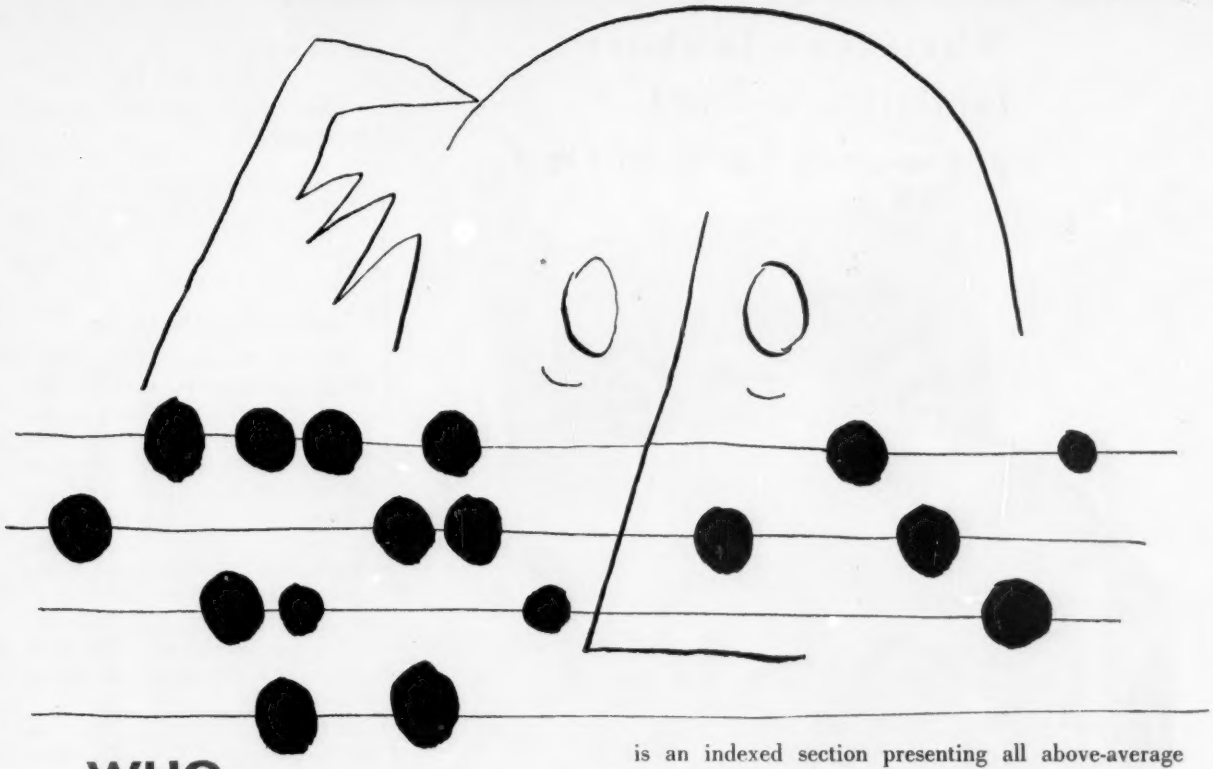

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The report opens with a brief discussion of what Starch Readership Service is, technique employed, its use and limitations . . . plus an interpretation of the significance of Starch advertising readership reports to the CHEMICAL ENGINEERING advertiser . . . written by Mr. DeWolf himself. Following his exacting analysis, is an indexed section presenting all above-average Starch-rated advertisements by 10 individual product categories, that appeared in CHEMICAL ENGINEERING during 1955.

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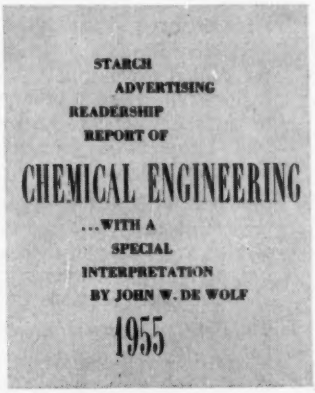

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DAN J. KEATING
Vice-President and General Manager
Agricultural Chemicals Division
Stauffer Chemical Co.
New York

Chemagro's Metacide

TO THE EDITOR: In the article "Pesticides—Past, Present and Prospects" (*Oct. 27*) . . ., we note that methyl parathion is listed as . . . Methyl Parathion (metacide), [produced by] Monsanto.

Please be advised that Metacide is a trademark of Chemagro Corp. for a formulation of methyl parathion and ethyl parathion with an emulsifier. To our knowledge, Monsanto does not sell such a product, and, if they do, they certainly do not sell it under our trademark. . . .

In order that we may protect our trademark rights in the name Metacide, we would very much appreciate your publishing a correction. . . .

THADDEUS PARR
Supervisor of Field Research
Chemagro Corp.
New York

Respect Residents' Desires

TO THE EDITOR: The article (*Nov. 24*) on the opposition encountered when a corporation tries to locate a research or engineering laboratory in a residential community prompts me to comment briefly because of a similar situation that has arisen in Santa Barbara.

Santa Barbara is essentially a residential city, a large proportion of the residents being retired from business and professional activities. It is not advantageously located for manufacturing purposes. During the past few years, a number of large corporations have decided that it would be a good location for their research, engineering and other nonmanufacturing operations. . . .

Santa Barbara is zoned comprehensively, a large part of the city having been zoned for residential purposes. Commercial enterprises find only limited areas zoned for that purpose, so that these have to locate in areas outside of the city zoned for that purpose by the county. Nevertheless, local merchants, as represented by the

Cosden is doing to keep mermaids from drying out . . .

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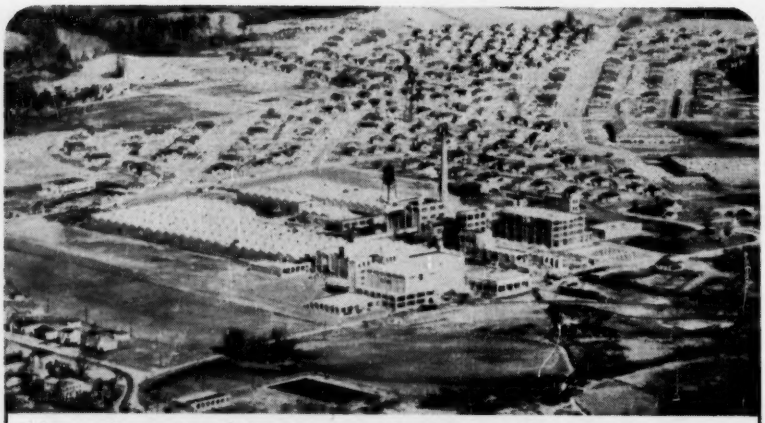

Celanese Corporation of America, Rome, Ga. Separate divisions of this plant produce rayon yarn by the viscose process and by the cellulose acetate process. The project includes a central power plant, machine shops and water supply system, 357 employees' brick houses, 25 executives' houses, a 25-room school house, roads, sewers and fire protection system.

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OPINION

Chamber of Commerce, aided and abetted by the local newspaper, are so eager to increase their business that they are willing to locate these commercial enterprises in a residential zone by supporting changes in the zoning laws. That is not peculiar to Santa Barbara, however. . . .

The comment I wish to make is that corporations should respect the desires of the residents of residential areas, though the facilities may be of a high type. Locating one commercial facility in such an area makes it difficult to keep others out: I speak from experience. Sooner or later, the area is no longer a desirable residential neighborhood. The corporations should locate their facilities in zones set aside for them. Furthermore, the traffic problems are greatly increased adjacent to the facilities. It was also shown that the assessed value of [one proposed] development would have been about half of that for the area if devoted to homes. The "increased tax take" argument was exploded.

OLIVER W. STOREY
Santa Barbara, Calif.

MEETINGS

Society of Plastics Engineers, 13th annual technical conference, Sheraton-Jefferson Hotel, St. Louis, Jan. 16-18.

Assn. of American Soap and Glycerine Producers, annual convention, Waldorf-Astoria Hotel, New York, Jan. 23-25.

Texas A&M College, 12th annual symposium on instrumentation for the process industries, College Station, Tex., Jan. 23-25.

American Pharmaceutical Manufacturers' Assn., central section meeting. Edgewater Beach Hotel, Chicago, Feb. 11-13; western section meeting, Ambassador Hotel, Los Angeles, Feb. 18-19.

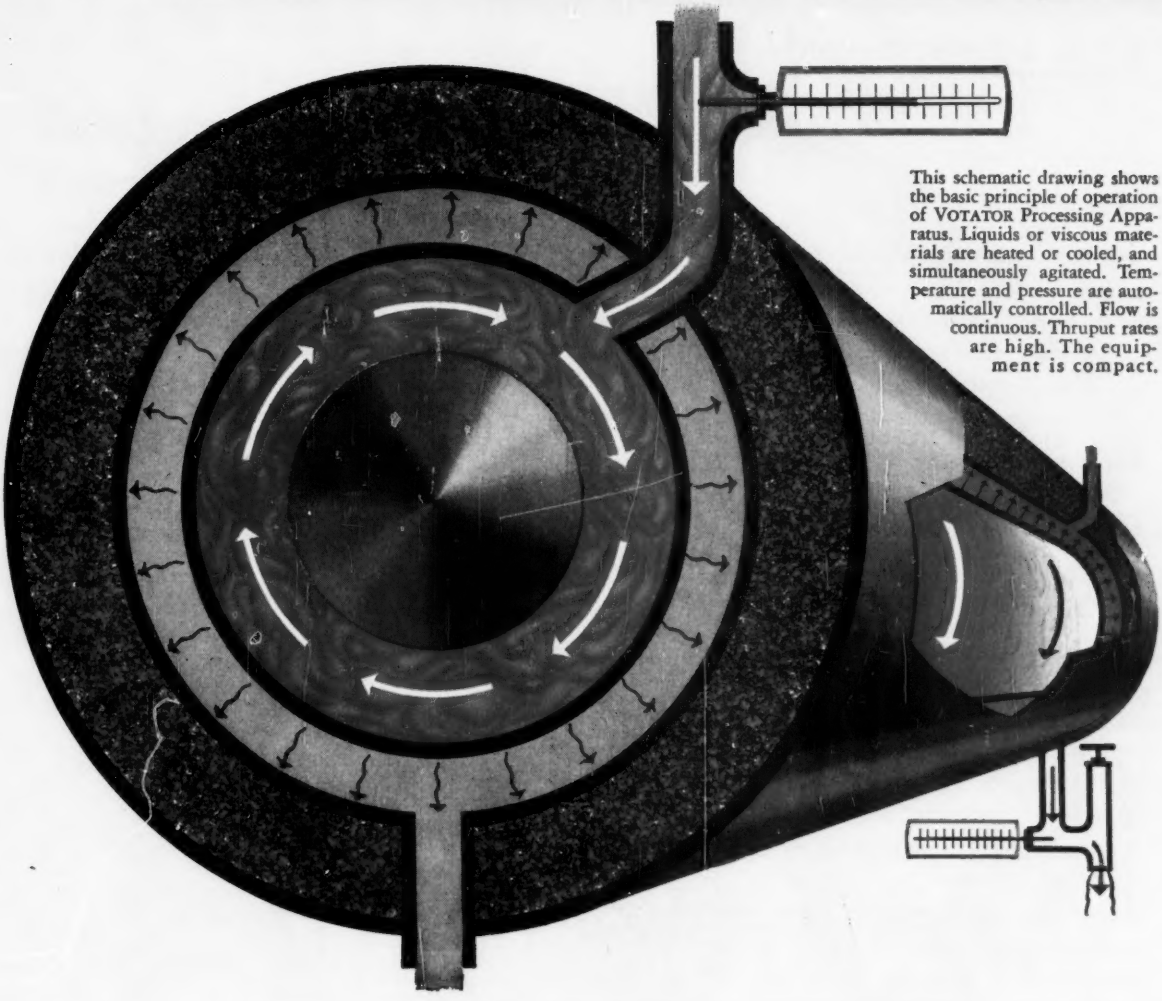
American Institute of Mining, Metallurgical and Petroleum Engineers, Inc., annual meeting, Hotels Roosevelt and Jung, New Orleans, Feb. 24-28.

National Agricultural Chemicals Assn., spring meeting, Fairmont Hotel, San Francisco, March 6-8.

Federal Wholesale Druggists' Assn., midyear meeting, Statler Hotel, New York, March 7-9.

Nuclear Congress International Atomic Exposition, Convention Hall, Philadelphia, March 11-15.

Chemical Market Research Assn.; theme: our next five years of competition with foreign chemical industry; Sheraton Hotel, Philadelphia, March 12-13.



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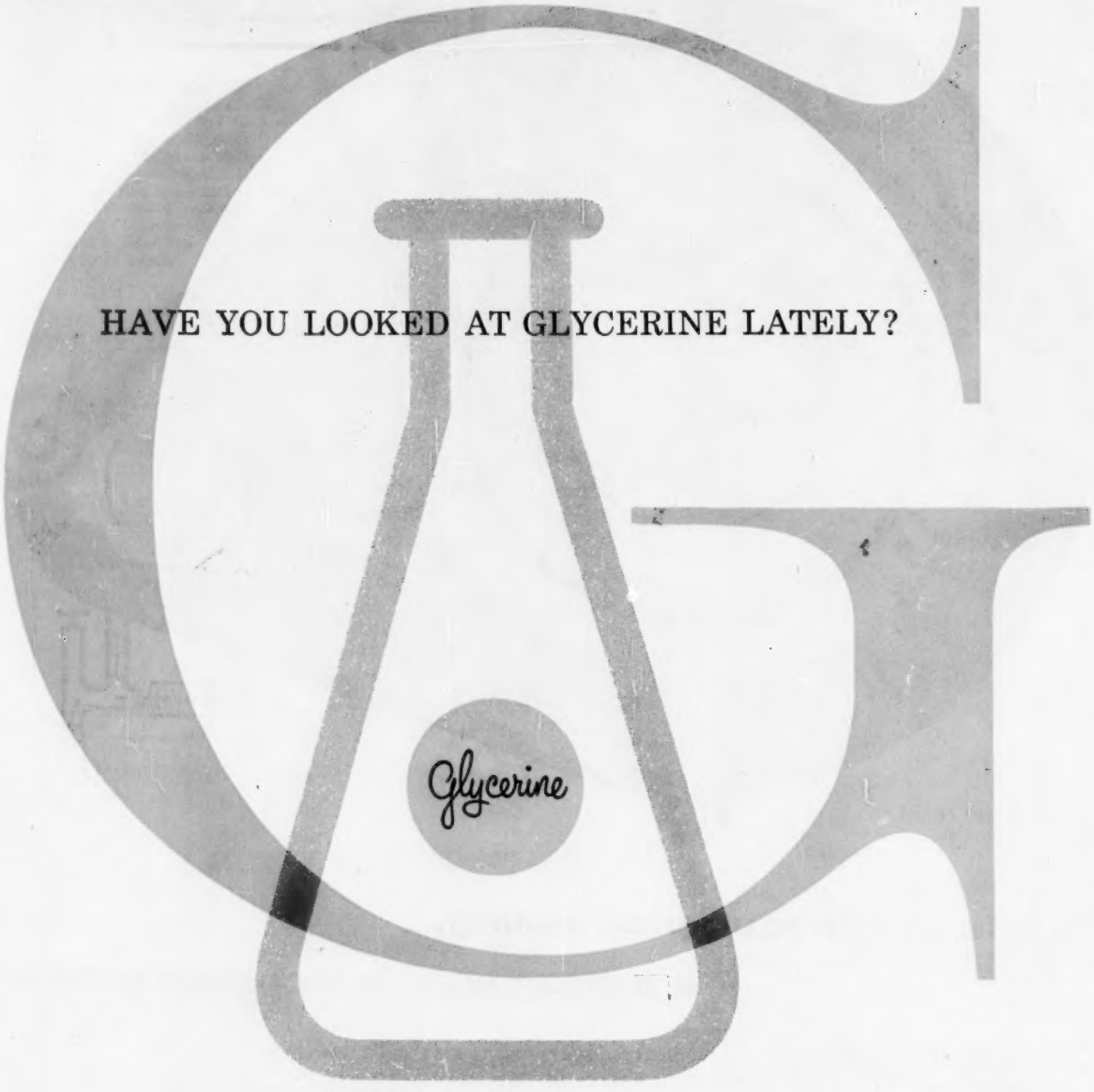

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SHELL

Business Newsletter

CHEMICAL WEEK
January 5, 1957

An Atomic Energy Commission uranium purchase agreement signals the go-ahead for the first of the major uranium projects in New Mexico's Ambrosia Lake district. AEC last week contracted to buy output of a mill to be built by a combine that links Homestake Mining Co., United Western Minerals, J. H. Whitney Co., and White, Weld & Co. Construction of the 750-tons/day mill will begin in February.

Western Knapp Engineering Co. (San Francisco) will build the mill—which is to be located five miles northwest of Grants, N.M., and about 20 miles from the group's property. Drilling at the location has blocked out ore reserves totaling 1.3 million tons.

An alkaline separation process will be used in the $8-million mill, which is slated to go into operation in about 15 months.

But AEC has not yet come through with a contract for Homestake's venture with Sabre-Pinon Corp. This project, also in the Ambrosia Lake area, calls for a $12-million mill with a 1,500-tons/day capacity. Agreement on a limited partnership between Homestake and Sabre-Pinon enterprise had been reached last month. By that agreement, Homestake would receive 25% of the profits of the mill's operations.

•

Three chemical firms have settled their argument with the city of Deer Park, Tex. In order to keep the city from annexing the island in the Houston ship channel on which the firms—Rohm & Haas, Diamond Alkali, and Lubrizol—have plants, the firms will pay the city a total of $40,000/year until 1965. Strips of land on the island around the plant will be made part of the city—to prevent some other Texas municipality from annexing the island.

•

Puritan Chemical Co. (Atlanta, Ga.) will try to bring glamor to the sanitary supply industry via a new type of sample packaging. It's introducing application-size (¼ oz.) cellophane packs of its hand-cleansing powder, Viking, this month. Advantages: improved appearance over glass bottles, less waste of product.

•

The chemical industry and the Pentagon swapped awards last week.

On the same day that the Manufacturing Chemists' Assn. presented a special certificate of commendation to the Army Chemical Corps. for its low accident frequency rate "in hazardous situations that would not occur in private industry," Monsanto Chemical Co. won a Defense Dept. award for "outstanding cooperation with the reserve program of the armed forces." Monsanto gives employees leave for military service in addition to their normal vacation time. Too, it gives employees the difference between company and military pay for time spent in reserve training. Employees don't lose seniority when on military leave.

Business
Newsletter
(Continued)

General Mills purchase of a Mexican steroid-maker—Protex, S.A.—could have far-reaching significance. Production of steroids from vegetable sources, largely from Mexican-grown barbasco roots, has been limited because of root inavailability. General, already making some steroid intermediates at its Kankakee, Ill., plant, thus insures a basic position in the steroid field. Protex claims to be second-largest Mexican producer of steroid intermediates.

The Protex acquisition broadens the milling firm's line of products, strengthening its position as supplier of basic pharmaceutical intermediates.

Firms without Mexican steroid sources have been turning to root extracts from plants grown elsewhere—and Puerto Rico is an attractive alternate source. According to the Puerto Rican economic development administration, at least one firm of the three now making steroid intermediates in Puerto Rico is expanding—it's installing equipment to triple capacity.

In addition, more barbasco plants will be raised on the island to supply the new facilities. For U.S. pharmaceutical houses, this could mean more reliable supply sources, lower prices.

•

There's divided opinion about a proposed change in the Securities & Exchange Commission regulations for foreign stocks offered for sale in the U.S. Under the proposal, the rules would be relaxed so that certifications of accounts receivable and independent audits of physical inventories could be waived for concerns with assets of $100 million or more that have been in business for at least 25 years.

SEC head J. Sinclair Armstrong, in asking for comments on the proposal by Jan. 14, said he personally opposed the changes, since U.S. firms, no matter what size or age, must have the certifications and inventory audit. The proposal, made at the urging of the New York Stock Exchange, would allow listing on the "Big Board" of the stock of Montecatini, the Italian chemical concern.

Possible U.S. listing and sale of Montecatini stock could affect its plans for building a plant in the U.S. Montecatini, whose interests in plant sites in West Virginia are well known, may be the firm for whom 6-month options on some 800-900 acres of land along both sides of the Ohio River near Mercer's Bottom, W. Va., have been obtained. Identity of the holder of the options has not been revealed.

•

Chemists and other scientists among Hungarian refugees in Austria are being lined up for prompt job placement in U.S. industry and in other labs. The National Academy of Sciences, acting as go-between, already has requests from a number of prospective employers for Hungarian researchers. In addition to its contact work in Austria, NAS, through its National Research Council, has set up a job placement office at the Camp Kilmer, N.J., refugee clearance center.

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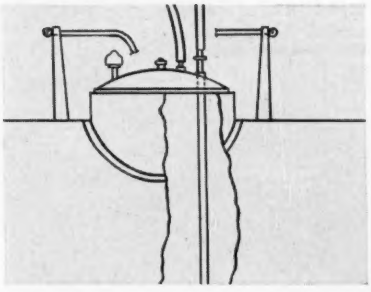

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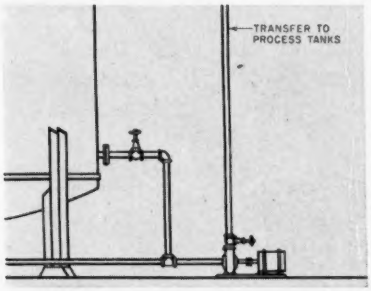

to process . . . is the subject of *Caustic Soda Engineering and Handling Guide*, the newest Hooker bulletin.

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For a copy, check the coupon for Bulletin 102.

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ortho-Dichlorobenzene

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Distillation range	4°C. inc. 179.5°C.
Specific gravity (15.5°/15.5°C.)	1.313

Monochlorobenzene

Freezing point	−44°C.
Distillation range	1°C. inc. 132°C.
Specific gravity (15.5°/15.5°C.)	1.113

Monochlorotoluene

Freezing point	below −45°C.
Distillation range	158.3° to 161.7°C.
Specific gravity (15.5°/15.5°C.)	1.080

Trichlorobenzene

Freezing point	10°C. Max.
Distillation range	5°C. Max. inc. 216°C.
Specific gravity (15.5°/15.5°C.)	1.466

Nialk® Trichlorethylene

Freezing point	−86.4°C.
Distillation range	86.6° to 87.8°C.
Specific gravity (15°/4°C.)	1.469

If you would like specifications and other data on these Hooker solvents, please check the coupon.

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NaSH	70 to 72%
Water (Crystallization)	26% Min.
NaCl	0.8% Max.
Fe	5 ppm Max.

2. *Hooker packaging.* Hooker sodium sulfide and sulfhydrate always come to you in brand-new drums lined with a special inert lacquer to prevent iron pickup. The drum lids are sealed with lacquer and secured airtight with six sturdy lugs to fend off air and moisture contamination.

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For more information on chemicals mentioned here, check below:

- ☐ *Caustic Soda Engineering and Handling Guide*, Bul. 102
- ☐ *ortho*-Dichlorobenzene
- ☐ Monochlorobenzene
- ☐ Monochlorotoluene
- ☐ Trichlorobenzene
- ☐ NIALK Trichlorethylene
- ☐ Sodium Sulfide
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COKE OVEN: With no write-offs, a slowdown in chemical expansion?

Steel Pinch Will Tighten

The pinch of the already tight steel situation (see p. 37) became a degree more painful last week as the government refused to grant fast tax write-offs to the steel industry.

Office of Defense Mobilization Director Arthur Flemming explained that granting tax aid for $2.3 billion of steel-mill and coke-oven expansion would give a favored position to the steel industry, since further steelmaking capacity is not needed for the nation's defense program. He said that promoting expansion for civilian needs would be "contrary to the intent of Congress" in setting up the wartime production boost incentive program.

Faded Hopes: The decision shatters hopes that steelmakers held for their expansion programs and—this hits expansion-minded chemical companies—sets up conditions that will likely bring on another round of steel price hikes. When the steel companies raised their prices following the steel strike, they made it clear that the posted increases were not enough to provide for construction of new plants.

Thus, without increased cash flow that would have resulted from faster write-offs, and in the face of what the steel industry has termed "outmoded and inadequate depreciation allowances," it's a pretty sure bet that new steel price rises are on the way.

Chemicals Included: The $2.3 billion worth of plant expansions on which the fast write-offs were asked included facilities capable of yielding somewhat more than 20 million gal./year of benzene—and correspondingly large amounts of toluene, xylene, naphthalene, tars and pitch.

The real puzzler now, of course, is whether steel companies will go ahead and expand anyway, despite the lack of amortization help. In answer to questions put last week, several companies declared their intention to go ahead.

- U.S. Steel—which had asked for write-offs on $35 million worth of coke ovens at Gary, Ind., $19 million worth at Morrisville, Pa., and close to $450 million in steelmaking facilities—said some of its projects would have to be deferred and others might be delayed. The company says it will do all it can, however, to proceed with its expansion plans.
- Armco Steel—which was planning to spend $11 million for 63 new coke ovens (capacity: 400,000 tons/year of coke) at Houston, Tex., and $36 million for 186 ovens (capacity: 1.1 million tons/year) at its Ashland, Ky., plant—said "no comment" to questions about its intentions. The company had made applications for a total of $360 million in write-offs on a wide variety of projects.
- National Steel Corp. says it will continue with plans for a $72-million investment in new facilities, regardless of the government decision. The company had applications for $48.6 million of coke-oven and sintering facilities in Michigan and some $23 million in other facilities elsewhere.
- Crucible Steel—which would have installed a $62.8-million rolling mill and one battery of coke ovens at Midland, Pa.—says it will give the government action further study. Other companies that were planning

new coke-oven and steelmaking capacity include Kaiser Steel, McLouth Steel, and Jones & Laughlin.

Side Effects: Besides the prospect of further steel price increases, chemical management men are anticipating continued shortages of steel needed for new construction and replacement programs scheduled for 1957. Chemical processors are planning to spend $1.9 billion in 1957 for expansion, an increase of 20% over that of 1956.

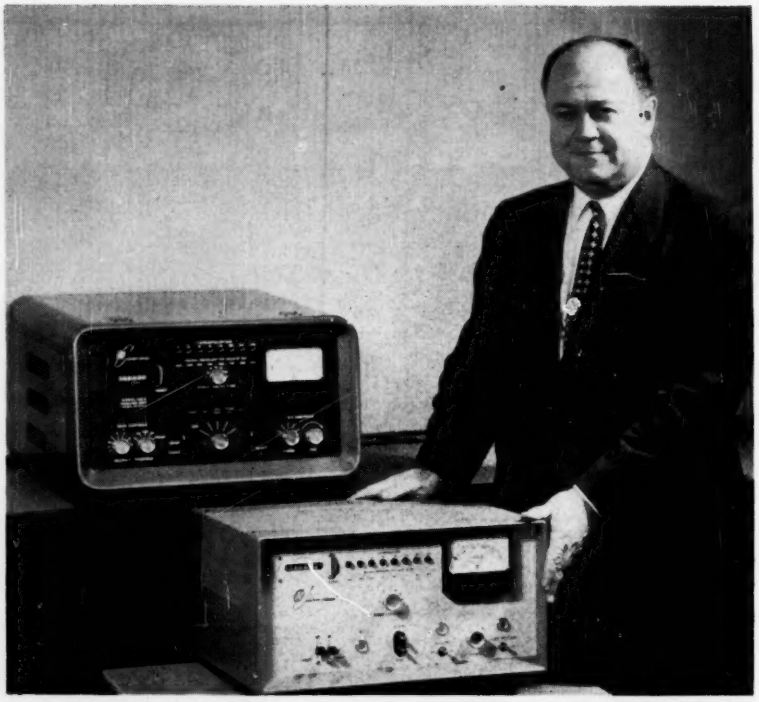
Among items most difficult to get are plate steel and structural members (*see p. 37*), critical components for new construction. It's likely, observers say, that these parts, as well as seamless tubing, will remain in short supply for some time. Even if steel companies should go ahead with their plans at previously scheduled pace, significant new capacity wouldn't be available until late '57 or '58.

Further increases in steel prices will doubtless bring hikes in the cost of new equipment. Equipment makers have already said they could not afford to absorb new steel costs.

Chemical Cutbacks: The question is, will these increased prices of steel, and the slowdown in expansion of coke-oven facilities disrupt the general chemical production and expansion program? Most observers think not. If present steel shortages continue, expansion will be slowed, but chemical firms have consistently stated that an increase in steel prices will not have much effect on their building plans. As for coke-oven chemicals, the past year's downturn in agricultural chemical requirements has left adequate supplies in its wake.

Other Programs: In Washington, the Administration has for some time opposed the broadening of the fast write-off program. Flemming points out that five of the expansion goals originally set up by ODM have already been met, though technically they are not closed out. These goals include alkylates, titanium melting facilities and titanium processing facilities, are expected to be closed out in the next few days.

Write-offs have recently been granted to National Distillers Products Corp. for 65% of its $7.6-million investment in zirconium and hafnium facilities and to NRC Metals Corp. for 75% of its $7.2-million expenditure in zirconium metal facilities.



N-C'S PHELAN: Merchandising is his strong point.

N-C Will Stress Selling

Call in a specialist when there's a specialized job to be done. That was the thought behind the preplanned switch in executive leadership made by Nuclear-Chicago Corp. (formerly Nuclear Instrument and Chemical Co.).

Three years ago, the company called on financial expert E. B. Tilton to do a fast, short-term job of whipping company finances into shape. Job done, Tilton has now handed over the reins to sales-minded James Phelan, who, as president, hopes to boost chemical sales some 40% next year, and who will launch the company's new line of radiation counters (*see cut*).

Phelan inherits a securely financed firm. When Tilton took over in 1953, the company had shown a severe after-tax loss for the year. Under his tutelage, company earnings after taxes rose to $19,000 in 1954, then to $110,000 in 1955, and to $180,000 in fiscal '56.

Added to this record is the fact that Tilton set the company up so that half its net worth is in cash.

Thus, with money to spend on diversification, expansion and sales promotion, Nuclear made its latest move, selected another specialist—this time, a merchandiser.

Phelan, a board member since 1952, has had plenty of opportunity to prove his merchandising ability to the rest of Nuclear's management by successfully building up sales of the company's line of instruments. Nuclear has had a 100% increase in sales in three years, largely under Phelan's directorship, compared with an average 30% increase for others in the industry.

The new radiation counters, scheduled to be on the market by this spring, aren't the only products Phelan and Nuclear will push during '57. The company also makes chemicals as a supporting service for buyers of its instruments. While chemicals now account for only 10% of sales, the company hopes to boost output 40% per year for the next few years, mainly on such products as its carbon-14-based amino acids and antibiotics. Industrial users have accounted for 50% of the total chemical sales, with the rest going to medical and biological researchers.

New Delay for Reynolds

A storm of protest has greeted last week's 3-2 vote by the New York State Power Authority to allocate to Reynolds Metals Co. over 30% of the available firm power to be developed by the St. Lawrence Seaway project (CW Business Newsletter, Dec. 29, '56).

Union leaders, municipal authorities and rural cooperatives seeking power from the development are leading the opposition.

Focal point of objections is the contention that Reynolds' contract for 239,000 kilowatts of electricity plus earlier allotments of 239,000 kw. to Aluminum Co. of America and 115,000 kw. to Niagara-Mohawk Power Co., a private utility, would leave little of the authority's 750,000 kw. of power for local public use.

Reynolds has announced it would build an $88-million aluminum reduction plant at upstate Massena, N.Y., if it could get the power allotment it sought. Alcoa already has a 200-million-lbs./year reduction plant near Massena; but, unlike Reynolds, its power allocation is in the nature of a replacement for productive capacity it would surrender from its own power plant.

Long Wait: Now it appears that Reynolds will have to wait still longer before it can start construction.

Moreover, considerable pressure is being brought on New York Governor Averell Harriman, who has final authority to approve or veto the allocations.

On this score, the matter will likely develop into a considerable political hassle, since the three members of the seven-man power authority board who voted for the contracts are holdovers from the governorship of Republican Thomas Dewey. The two who voted against the allocation are appointees of Democrat Harriman. Two didn't vote.

Fears of what might happen if Reynolds' request were turned down were expressed by Power Authority Chairman Robert Moses: "Reynolds [proposal] was the best thing that came up, and we took it." Even a six-month delay, Moses reported, might push Reynolds into erecting its new plant in Ohio.

No Drug on the Market

Concentrated promotion of half its drug line has heaped up pretax profit margins of 50% or more since 1950 for G. D. Searle & Co., the firm's president, John Searle, reported to Chicago financial folk last fortnight. Searle figures that emphasis on 12 of its 25 products prevents sales dilution and gives the company a competitive edge. And any move resulting in so large a profit is particularly noteworthy in the face of generally declining margins in chemical process industries.

Searle's move seems to be paying off. The company estimates its sales for 1956 at $28.3 million, down only slightly from earlier forecasts of $28.5 million, but expects its profits to be up to $6.8 million, a 4½% increase over forecasts of $6.5 million. Earnings per common share—$1.40 in 1955—will be up to about $1.55 in '56.

President Searle pins his company's successful showing to a strong research program, which, he reported, operates without budget, on a day-to-day basis. Though he won't divulge actual figures, Searle says the firm spends more of its sales dollars on research than is similarly spent by any company for which he has seen published figures. Searle research expenditures, incidentally, are expected to increase 20% in 1957.

Looking ahead, Searle says that in '57 his company will introduce a new, synthetic hydroceletic product—a material that helps remove excess fluids which accumulate in body tissue. Moreover, the company has blueprinted a building program that may involve a site at Wheeling, W. Va., though it's undecided yet whether that city or Skokie, Ill., is economically best suited to new expansion.

Chemist to Chief

RUSSIA has ousted the chairman of one of its most important industrial planning agencies and named a chemical specialist to take over the post. Mikhail G. Pervukhin, an industrial expert who has specialized in management of chemical and power plants, has replaced Maxim Z. Saburov as head of the State Commission for Current Planning.

Top Soviet officials named six other industrial and agricultural leaders to serve with Pervukhin. It will be their job to boost Soviet industrial output—including the chemical industry—to make up for failure to meet this year's quotas.

EXPANSION

Magnesia: H. K. Porter Co. is blueprinting an $8-million plant for Pascagoula, Miss., to produce magnesia and basic refractory products. The plant is scheduled to go onstream early in '58.

•

Phenol: Allied Chemical's Barrett Division will "nearly double" the capacity of its synthetic phenol plant in Philadelphia. New equipment, already being installed, should be operating by early '57.

•

Pulp & Paper: Dryden Paper Co. (Montreal) will boost production of pulp and paper from 72,000 to 142,000 tons/year by early '57. At that time, Dryden will also start making bleached sulfate pulp at Montreal.

Washington Angles »

» **Conversion of the Louisville rubber plant** to other products is among plans being considered by government officials now that bids of Publicker Industries and Union Carbide to lease the plant have been rejected. The officials may soon ask Congress to give them another chance to sell the 87,000-tons/year alcohol-butadiene plant, with a contract provision that would let a buyer convert it to produce products other than butadiene.

Previous testimony given to Congressional groups has indicated that such a plan would bring more, and higher bids for the plants. Sale, under any new plan, would be conditioned on Publicker's existing lease on the now-idle plant, which expires in April '58.

» **Power Reactor Development Corp.**, a nuclear power development company sponsored by 21 utility concerns, may become a precedent-setter in atomic safety when it appears at the Atomic Energy Commission's hearings on the subject that will begin Jan. 8.

The company's plans for safety measures, as they are delineated at AEC hearings, may well set precedents for future industrial nuclear development projects.

The company cleared one hurdle when an application that it be declared not to be an electric utility under the Utility Holding Company Act drew no opposition.

» **Shutdown of Navy paint plants** is expected shortly—as soon as Defense Dept. officials can collect final figures on the cost of buying commercially made paint. Robert Lanphier, the department's assistant secretary for supply and logistics, reports that the order to shut down the Navy plants will be issued as soon as the department has sufficient cost justification data in hand.

How soon will the order come? Estimates range from two weeks to more than a month.

» **AEC's uranium ore concentrator** at Monticello, Utah, may shut down this year. The commission has confirmed that it will settle the fate of the facility within the next 12 months. The concentrator, owned by the government is operated by National Lead.

Possibilities open to the government: (1) run the mill, as is now being done; (2) sell it for private operation; or (3) junk it.

Sale to National Lead or to any other company might require that the purchaser secure a good position in ore reserves. AEC denies that it has any plans to junk the mill, and current reports indicate it will be run at capacity during 1957.

Carbon Tetrachloride: Cornwall Chemicals Ltd., jointly owned by Canadian Industries Ltd. and Stauffer Chemical Co., is now building a plant to produce carbon tetrachloride using surplus carbon bisulfide from its recently expanded plant in Cornwall, Ont. (*CW Business Newsletter, Nov. 24, '56*) The entire Cornwall expansion will cost about $1 million.

COMPANIES

Mead Corp. and Atlanta Paper Co. will consummate their proposed merger if Mead stockholders approve the move at the firm's annual meeting in April. Directors of both companies have approved the move, as have Atlanta Paper's shareholders. Terms call for one share of Mead to be exchanged for two of Atlanta, with the latter becoming a wholly owned subsidiary of Mead.

•

Grove Laboratories (St. Louis) has just purchased all the outstanding stock of Harrison Products Inc., San Francisco pharmaceutical firm.

Glidden Co. (Cleveland) has secured $20 million worth of revolving credit with 10 major banks to help finance its current expansion program.

FOREIGN

Aluminum/Austria: Four nationalized aluminum plants, now operating separately in Austria, will merge into a single concern that will bring all operations from production to finishing under one management. About $8 million will be invested in the new combine, with part coming from Marshall Plan funds, the rest from the plants concerned, and the Austrian government. The consolidation is planned for this spring.

•

Streptomycin/Poland: Poland will purchase three plants from the Soviet Union to produce streptomycin. Two of them will be located in Tarchomin (near Warsaw) and the third near Krakow. The Polish government hopes to make contacts with pharmaceutical research installations in the U.S., England, France and Switzerland, also indicates that the plants will use foreign equipment and licenses.

•

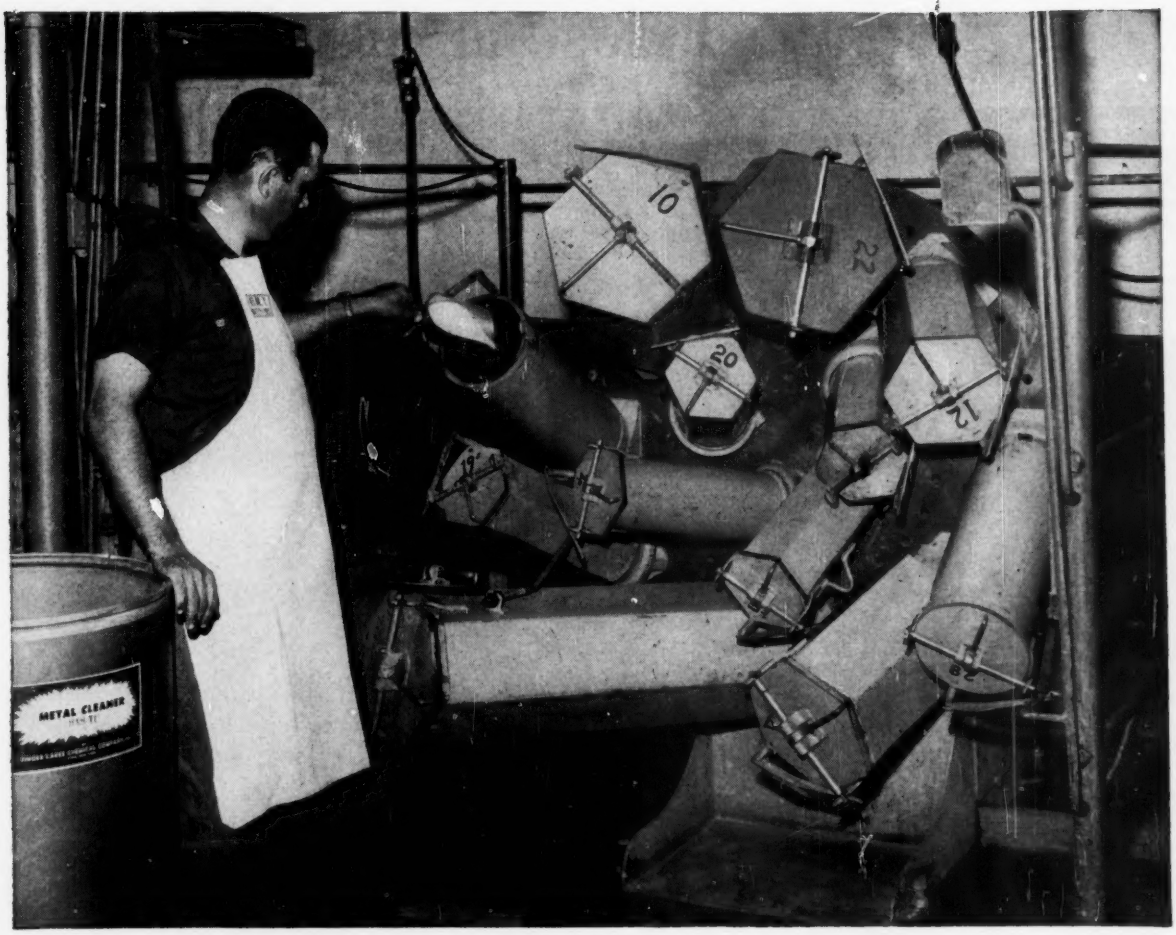
Alumina/British Guiana: Aluminium, Ltd. (Montreal), plans to build a $33-million alumina plant in British Guiana. Scheduled for completion by mid-'59, the new plant will be capable of turning out 250,000 tons/year of alumina by processing about 500,000 tons of bauxite to be supplied from the company's mine in the Demerara River district.

•

Phosphorus/Germany: Knapsack-Griesheim AG., a subsidiary of Farbwerke Hoechst, has boosted elemental phosphorus capacity at its plant in Knapsack to 35,000 tons/year.

•

DDT/India: India's Ministry of Production will build a $1.7-million plant at Alwaye, Kerala, to produce 1,400 tons/year of DDT. The new unit, scheduled for completion by June '58, will be managed by Hindustan Insecticides Ltd. Singmaster & Breyer (New York) will engineer the project.



PRECISION METAL FINISHING—Tumbling compounds play a key role in barrel finishing. Here, Lakeseal Metal Cleaner, based on CMC, is being added to tumbling barrels at BMT Manufacturing Company. Lakeseal Metal Cleaner is a product of Finger Lakes Chemical Company, Ithaca, New York.

Barrel Finishing Costs Tumble with CMC

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General Offices: Memphis, Tenn. Plants at Memphis and at Foley, Florida

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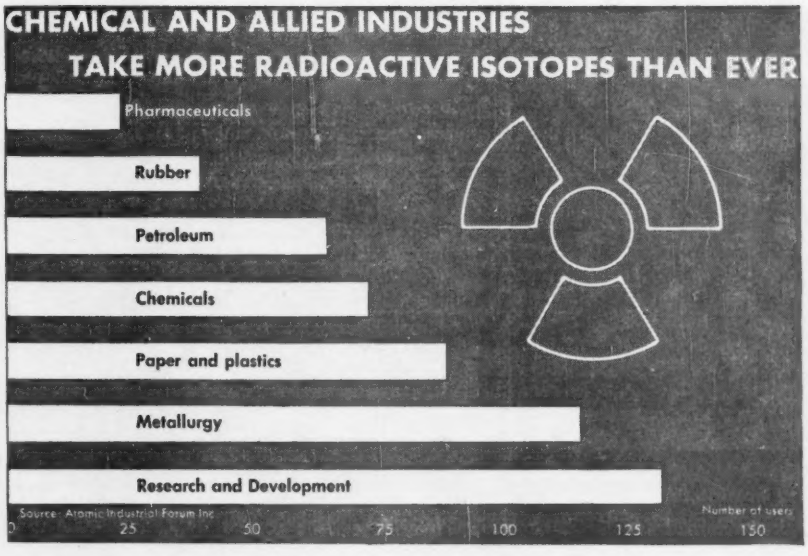
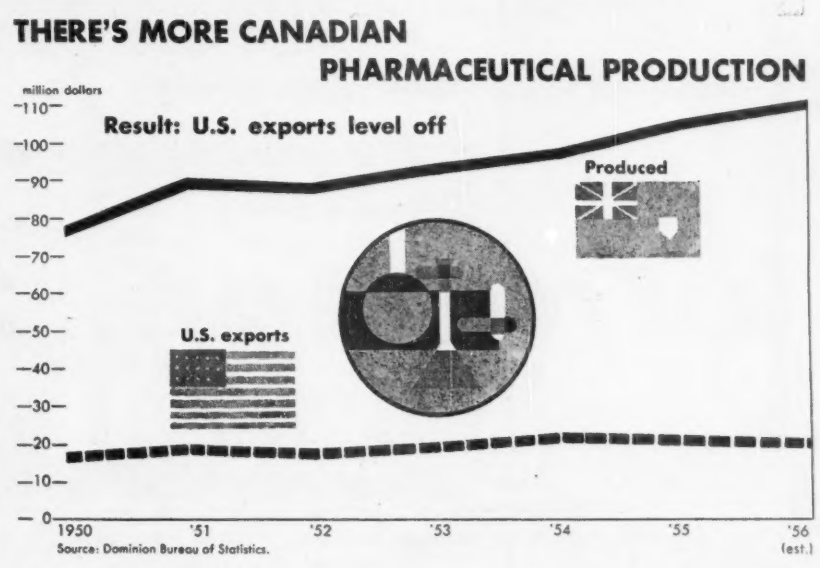
Charting Business

CHEMICAL WEEK
January 5, 1957



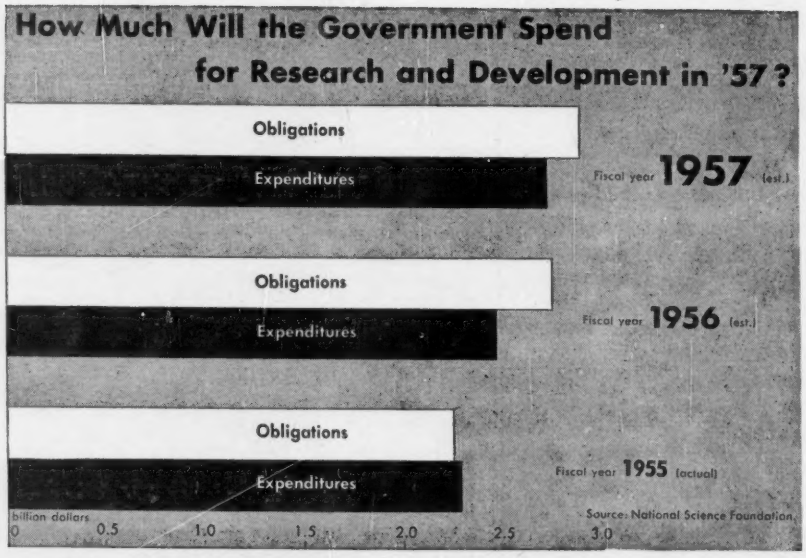
THE MARKET for radioactive isotopes is growing fast. Last year, 134 firms swelled the list of isotope users to 1,121. Chemical companies were most interested—20% more used radioactive materials in '56 than in '55. Paper and plastic manufacturers upped their use of isotopes 17%. Research and development registered a 14% hike. Largest use for radioactive isotopes by industry today is thickness gauging (774 firms); 373 firms use "hot" atoms to study radiation effects on materials; 128 companies rely on them for radiographic inspection.



DOLLAR VALUE of U.S. pharmaceutical exports to Canada in '56 dropped 4% under the '55 level (a continuation of the 2.9% decline reported for the latter year). Reason for the dips: stepped up expansion and production by Canadian pharmaceutical manufacturers. Value of dominion pharmaceutical output has soared from $76.4 million in 1950 to an estimated $110 million in '56. Outlook: further Canadian drug expansions in the years ahead. This will squeeze U.S. drug and medicinal exports still more.

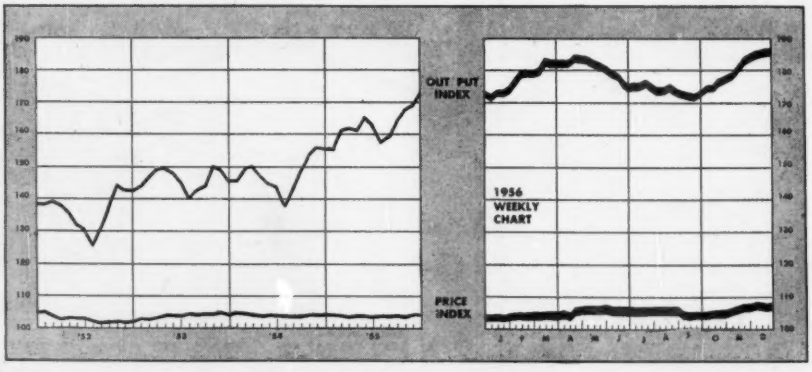
Charting Business

(Continued)



CLIMBING federal expenditures for research and development hit $2.3 billion and $2.4 billion in 1955 and '56, respectively, and should reach an estimated $2.7 billion in '57. This represents a 7% jump in '56 over the previous year, and an anticipated 12% leap for '57. Obligations (orders, awards, services, requiring future payments of funds) for the same period are just as high; $2.3, $2.8, $2.9 billion, respectively. This gives '56 a 22% lead in federal research spending over '55, with a conservative 5% increase anticipated for '57. Biggest obligation share, over $2 billion, will go to physical sciences in '57.

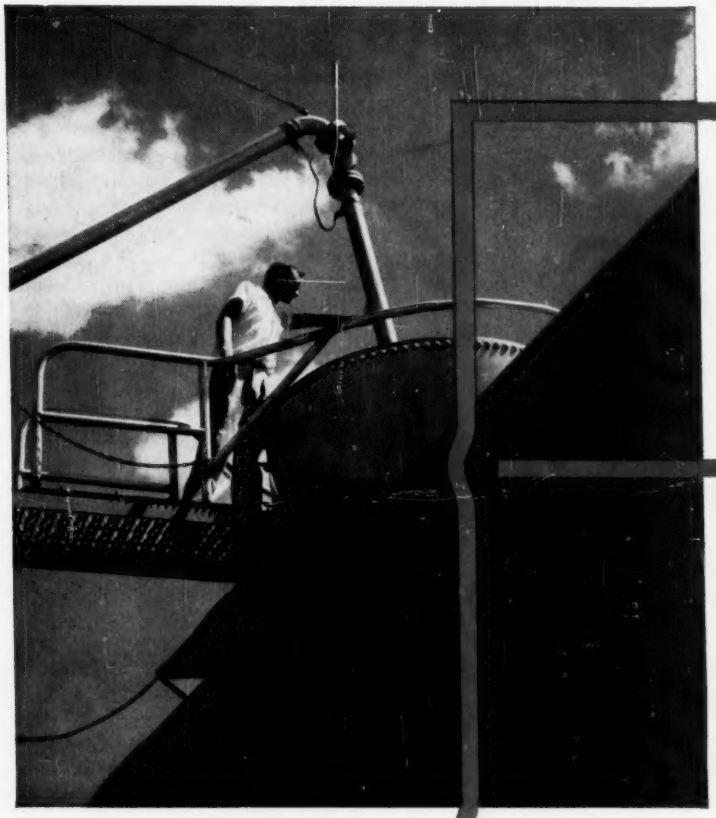
BUSINESS INDICATORS



WEEKLY	Latest Week	Preceding Week	Year Ago
Chemical Week Output Index (1947-49=100)	183.0	185.0	173.5
Chemical Week Wholesale Price Index (1947=100)	106.9	107.3	104.8
Stock Price Index of 11 Chemical Companies (Standard & Poor's Corp.)	443.9	434.6	477.2

MONTHLY—Production (Index 1947-49=100)	Latest Month	Preceding Month	Year Ago
All Manufacturing and Mining	149	150	145
All Chemical Products	184	181	178
Industrial Chemicals	201	197	197

At your call...



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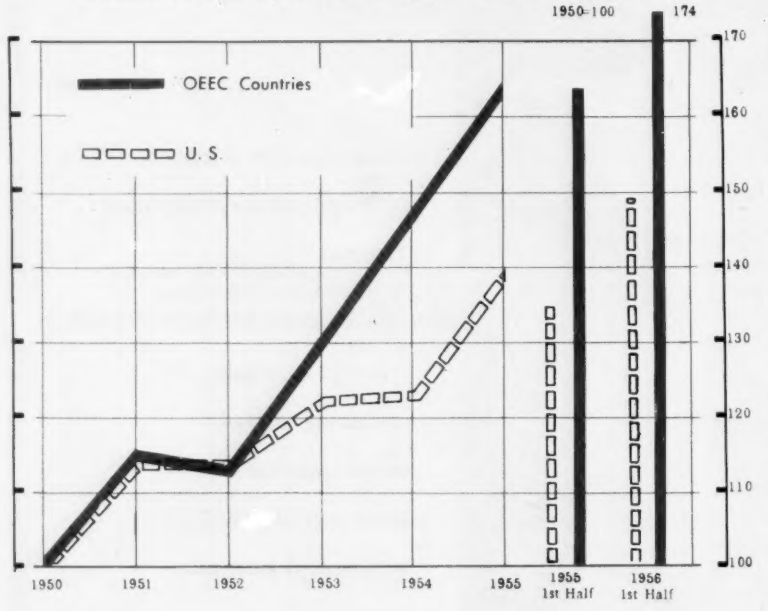
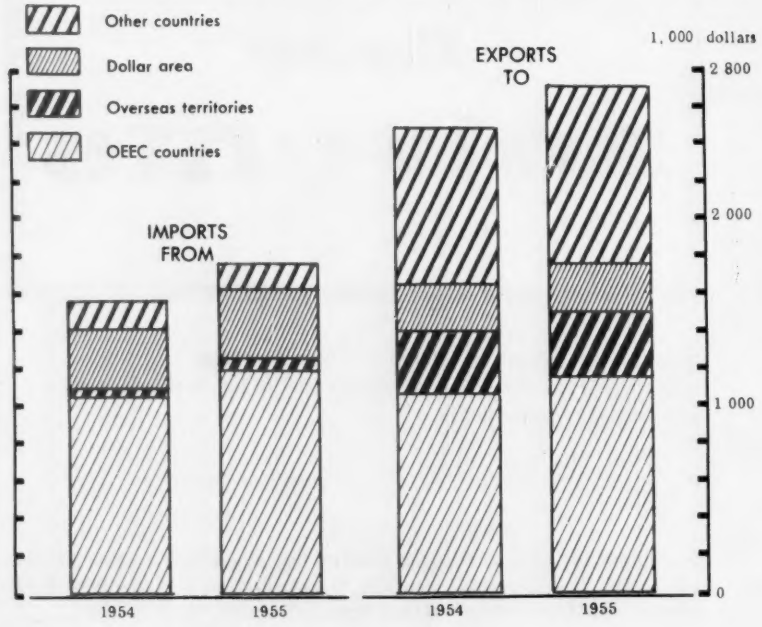
Will Suez Brake Europe's Boom?

CHEMICAL OUTPUT ROCKETS ON BOTH SIDES OF THE ATLANTIC

(Indexes of chemical production in OEEC countries and in the U. S.)



OEEC CHEMICAL IMPORTS GAIN, BUT EXPORTS ARE GREATER



U.S. chemical process industry management—traditionally wary of its European rivals—can look forward to a leveling off of competitive pressures from that source this year, due to a predicted decline in the growth-rate of Europe's chemical industry.

A report last week by the Organization for European Economic Cooperation predicts chemical production of its member countries* will continue to increase, but at a "rather lower" rate than the 13.5% average for the past three years. And if the Suez crisis causes a drop in general economic activity, one OEEC official told *CW*, chemical production may not rise at all.

For the first six months of 1956, OEEC figures indicate an over-all chemical production increase of 6% over the same period in '55. Substantial increases each year since 1945, except '52, have kept Europe's chemical plants ahead of European industry in general. Back in '55, the increase of 11.5% outstripped the 8.6% growth enjoyed by industry as a whole, although the gap has been narrowing.

While most of the increased production was absorbed by hikes in consumption, there were some trouble spots in '55. Dyestuff manufacturers, for example, ended the year with surplus capacity, largely because of a letdown in the textile industry. Will there be a change in demand for dyestuffs? There's no such an indication in world market conditions, OEEC officials warn.

The fertilizer industry also experienced surpluses in 1955-56. A slow increase in the consumption of phosphatic fertilizers and competition from the cheaper basic slag slowed the demand for phosphatics, particularly superphosphates.

Fertilizer capacity was used at normal production rates in the United Kingdom and Italy, but at only 50% of capacity in Germany, France and the Netherlands. Belgian demand fell to 30% of supply in 1955-56.

*Austria, Belgium, Denmark, France, West Germany, Greece, Iceland, Ireland, Italy, Luxemburg, Netherlands, Norway, Portugal, Sweden, Switzerland, Turkey and United Kingdom.

Despite an absence of the expected rise in fertilizer consumption, production increased in 1955-56. Production of nitrogenous materials was up 3%.

Potash fertilizer production in 1955-56 registered an increase of 2% over the previous year, reaching 2.44 million M.T. Predictions are for a 6% increase in production of both nitrogenous and potash materials, and a 2% increase for phosphatics during 1956-57.

Basic Chemicals: There was no appreciable change in the production trend of basic chemicals in 1955. Production of various materials continued to increase—at rates of between 4 and 12%—but the increases were at a slightly slower rate than in '54.

OEEC figures show soda ash production going from 2.26 million M.T. in '54 to 2.40 million M.T. in '55, a 6% increase. Caustic soda was up 4%, from 1.22 million to 1.27 million M. T., and chlorine production went from 724,300 to 811,216 M.T.—an increase of 12%.

Sulfuric acid production—a traditional chemical industry barometer—increased 6% in '55, to 10.83 million from 1954's 10.22 M.T. Calcium carbide and primary ammonia production both increased 4%, with the former going from 1.46 to 1.52 million M.T., and the latter from 2.47 to 2.57 million M.T.

Benzene and naphthalene output increased 10% and 15%, respectively, with benzene reaching 1.3 million M.T. Naphthalene production increased from 149,930 to 172,420 M.T.

Imports and Exports: Although the increase in OEEC imports (13%) in '55 was greater than that of exports (11%), exports again exceeded imports in dollar value. The export surplus was $960 million—6.4% greater than the $902 million surplus in '54.

Imports from the dollar area (*see graph, p. 30*) were up 17% in '55—from $299.7 million to $350.2 million. Exports rose 8%, from $236 million to $256.3 million. Imports from the U.S. and Canada represented 20.2% of total '55 imports of $1.73 billion.

Chemical Investments: Capital investments during 1955 by the eight OEEC countries that account for 80% of the OEEC area's chemical production were estimated at $1 billion. This sum is 23% higher than for the previous year, and is close to the U.S. figure of $1.02 billion for the same period.

Petrochemicals and plastics received the lion's share of OEEC investments. Current plans call for spending some $450 million for petrochemical plants that will be onstream before the end of '58. The new capacity will double the size of the industry, treble its output.

OEEC's chemical industry report suggests "satisfactory" progress should have been attained in '56, but predicts less-spectacular expansion will take place from here on out. The report adds that long-term success depends on successful personnel recruitment to eliminate technical and management shortages, and on continued investments — particularly in production facilities for basic chemicals.

All signs indicate plenty of competition ahead for U.S. manufacturers

1955: A GOOD YEAR FOR EUROPEAN CHEMICALS

- Total chemical production is up 11.5%.
- Production of nitrogen, phosphate and potash fertilizers—now more than 2 million tons each—is still rising.
- Exports are up 11% to a $2.68 billion level—a $960-million margin over chemical imports.
- Capital investments are up 23%—to more than $1 billion.

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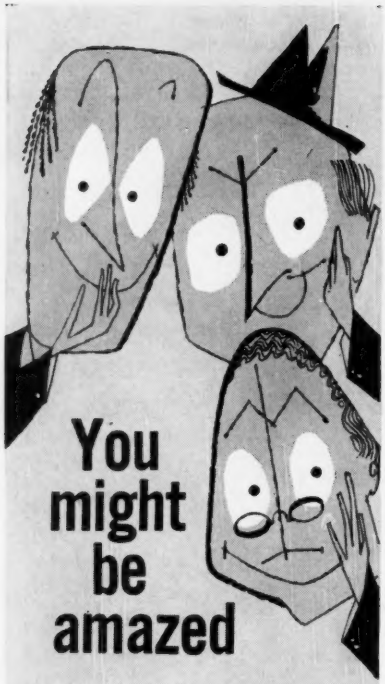

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ADMINISTRATION

from OEEC producers. Production increases—though destined to taper off—will cut into U.S. export and domestic markets. To what degree this will happen remains to be seen, but anticipated lessening of capacity boosts should soften the competitive impact.

LEGAL

Trade with the Communists: A wealthy research chemist who reportedly owns or controls at least 25 chemical companies in various nations is accused in two actions filed last week in U.S. district court in New York of having illegally traded chemical materials with Communist China and Poland during the Korean War. This defendant is Kurt Wallersteiner, a native of Germany who became a British subject during the 1930s and is now living in the United Kingdom. According to the Justice Dept., Wallersteiner and his Watford Chemical Corp. (formerly of Brooklyn):

- Unlawfully exported from the U.S. for transshipment to Poland 283 drums of indigo white, 200 drums of aldol α-naphthylamine, and 433 drums of amber petrolatum.
- Unlawfully imported into the U.S. 2,464 sacks of gallnuts (used in making medicines, dyes and inks) in which Communist China had an interest.

•

First U.S. Pollution Case: First enforcement action under the new federal water pollution control act is aimed at oil well operations along Corney Creek in Arkansas. Health-Education-Welfare Secretary Marion Folsom has named a five-man hearing board of state and federal officials to look into charges that oil operations there are polluting the stream, which flows across the state line into Louisiana's 1,940-acre Corney Lake. The board will hold a hearing Jan. 16, then report findings and recommendations.

LABOR

Unions' Rifts: Two of the major unions in the chemical process field have fence-mending jobs to work on this month. While Walter Mitchell, new president of International Chemical Workers Union (AFL-CIO), tries to heal the breach within ICWU's 11-man executive board (*CW, Dec. 29, '56, p. 31*) before next week's first meeting of the new board, O. A. Knight, president of Oil, Chemical & Atomic Workers (AFL-CIO), will be trying to persuade certain local unions to stay within the OCAW family.

Knight's immediate problem concerns a local representing about 500 employees of American Zinc Co. and New Jersey Zinc Co. in the Mascot-Jefferson City area near Knoxville, Tenn. This local—which parted company with International Union of Mine, Mill & Smelter Workers about eight years ago to affiliate with one of OCAW's predecessor unions—has voted to sever its ties with OCAW on grounds that OCAW failed to formulate and carry out a program to obtain more favorable wages. The local plans to seek an individual union charter pending possible establishment by AFL-CIO of a new international union for miners and refinery workers in the nonferrous metals industry.

•

Locals' Consolidation: Though the zinc workers are about to split off from OCAW, there's another move by OCAW locals that is much to the liking of the headquarters crew in Denver. That's the trend toward amalgamation of small locals into big locals—a move that OCAW leaders welcome as strengthening and streamlining the whole organization through enhanced bargaining power with considerable savings in servicing costs. Latest consolidation: the merger of three locals at Edmonton, Alta., into a single group. The new local is made up of five bargaining units, representing about 400 members employed by Liquid Carbonic, Alberta Oxygen, Canadian Industries Ltd., Canadian Chemical and a nonchemical firm.

•

Automation and Jobs: Chemical processing will be one of the industries to be studied this year in a Bureau of Labor Statistics project to measure the impact of technological innovations on workers and jobs. Several firms will be asked to serve as "guinea pigs" for detailed case studies—with anonymity guaranteed by BLS. In these studies, BLS staff members will interview management and labor officials on changes in productivity, employment, occupational needs, wages, industrial relations and other factors needed to present "a record of human adjustment at a single plant." Data will be published by BLS as a guide to all concerned, but names of firms and individuals will be withheld.

Year-end Disputes: As the old year ended, three labor disputes served as a reminder that nonwage issues can crimp production and construction schedules just as damagingly as strikes to gain new contract demands.

At Newburgh, N.Y., the nonaffiliated Fabrikoid Works Employees Assn. conducted a four-day sitdown strike in protest against the firing of a woman member at Du Pont's fabrics plant. The union felt that the woman was discharged because she was tardy once, but the company said it was because of her over-all attendance record.

The other two disputes were jurisdictional in nature. Members of International Brotherhood of Electrical Workers (AFL-CIO) threatened to delay construction of Canadian Industries Ltd.'s new hydrogen peroxide plant in Hamilton, Ont., unless the electrical work were farmed out to an electrical subcontractor.

At Tuscola, Ill., an order from the National Labor Relations Board ended picketing by members of the Plumbing & Pipe Fitting Union who contended that they—rather than the plant's maintenance workers—should be installing four steam locomotives as a temporary source of electric power.

KEY CHANGES

Kenneth C. Loughlin, to executive vice-president; **Francis S. Baer,** to director; Celanese Corp. of America (New York).

George R. Lawson, to director of marketing, Industrial Division, Pennsylvania Salt Mfg. Co. (Philadelphia).

Donald H. Wheeler, to director, Chemical Research Dept., Research Laboratory, General Mills, Inc. (Minneapolis).

Max C. Farmer, to technical director, Beryllium Corp. (Reading, Pa.).

Fred C. Foy, to director, H. K. Porter Co., Inc. (New York).

Lawrence C. Byck, Jr., to manager, heavy chemical sales, U.S. Industrial Chemicals Co. (New York).

Arthur M. Griswold, to manager, foreign research operations, Dow Chemical (Midland, Mich.).

William Lasdon, to director and member of the executive committee, Warner-Lambert Pharmaceutical Co. (Morris Plains, N.J.).

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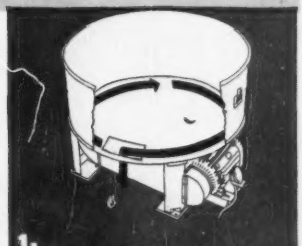

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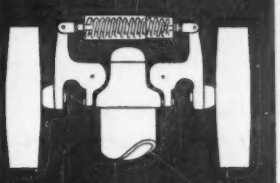

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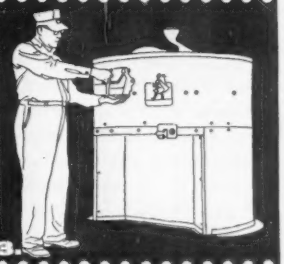

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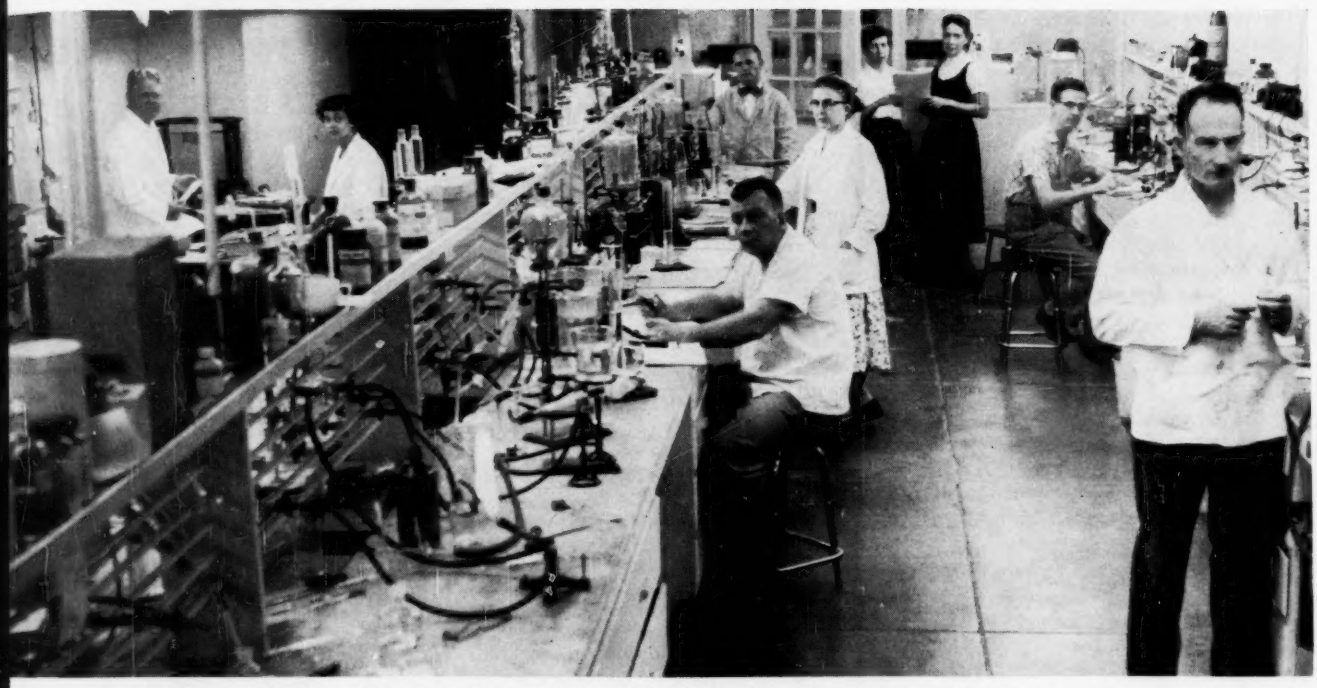


CLARK MICROANALYTICAL LABORATORY: It gives a helping hand to clients planning to 'go it alone.'

Trained Specialists—for the Asking

A company that sets out to recruit and train chemists, then encourages them to leave would seem to be working against itself. Nevertheless, that very idea is the basis of a new plan devised by Howard Clark, director of Clark Microanalytical Laboratory (Urbana, Ill.). For a fee and other considerations, he is offering to help staff other laboratories with chemists trained by him in microanalytical and biochemical techniques. There's an element of altruism in the scheme, too, since technicians of this stripe are among the scarcest.

So far, Clark has had plenty of inquiries about the plan but no firm takers.

Some other commercial laboratories, however, think the idea has merit. U.S. Testing Co. (Hoboken, N.J.) reports that it is considering a similar arrangement for its clients. Foster D. Snell (New York) has a somewhat similar service for clients who specifically request it. Snell doesn't stress the plan in customer dealings.

Clark's plan is aimed primarily at smaller concerns that now lack laboratory facilities, use commercial laboratories for analyses or research. As these customers expand, their needs will justify captive laboratories, for which they will need trained staffers—and that's where Clark expects to help. Toward this end, he asks his customers to:

- Supply a written statement of their intention to set up a laboratory and agreement not to hire Clark employees except as mutually arranged.
- Set a target arrival date. "Initially [the date] may be pretty vague," Clark tells clients, "but you can make it more definite when you can see it in a budget. We may need at least one or, better yet, two years for preparation, as our training facilities are limited."

As the arrival date nears, Clark will recommend qualified staffers. While the choice is strictly voluntary for both the lab man and the client, Clark will take part in decisions and negotiations.

After the man is placed, Clark will charge a consultation fee for a one-year transition period. This covers help and advice, telephone calls, correspondence, and visits to the new laboratory. The amount of the fee will also be determined by the volume of business, past and future, that the customer represents.

Clark also plans to extend the placement service to large companies that are on the lookout for analytical specialists. But for firms that seek only a small volume of laboratory service, consultation fees could amount to several thousand dollars.

While the chemist is breaking in, Clark hopes to handle the employer's routine and nonroutine biochemical analyses. After the chemist is established, farmed-out assignments probably would be reduced to some routine analyses during peak periods—and, of course, those unusual analyses that can be done most economically in a commercial laboratory.

Attracting Trainees: Finding enough suitable candidates is one of the yet-

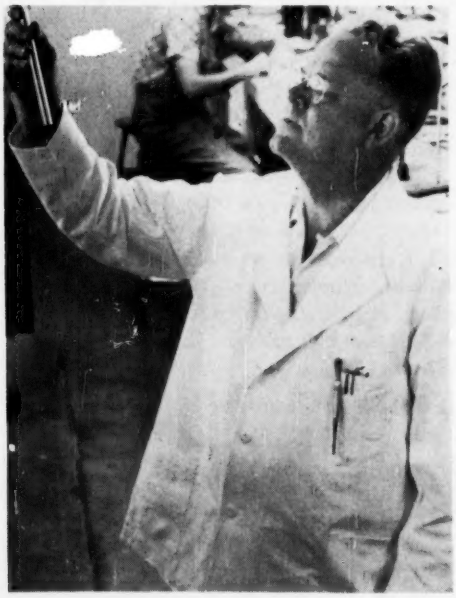
to-be resolved problems of the training program. The main inducement for recruits, as Clark sees it, is the knowledge that they are headed for positions of responsibility with the small firms they join. (His current staff, he says, is enthusiastic about the scheme.)

A prospective trainee is required to possess a bachelor's degree (in a curriculum heavy in chemistry) or equivalent experience, reasonable manual dexterity and a personality that "will fit him for the analytical aspects of research."

Clark doesn't intend to compete for graduates with top scholastic records. He finds that these men aren't interested in analytical chemistry because of its routine nature. On the other hand, he won't settle for tail-enders, either.

Clark believes that his program would speed the flow of trained microanalysts into industry. A microanalyst, he avers, ordinarily needs four years' experience after college before he's capable of setting up and operating a laboratory. Clark thinks two years in his laboratory plus the year of consultation would fit a chemist equally well for the job.

To budding microanalysts, therefore, Clark can offer the attractive prospect of an early start on a career with built-in growth potential. And consultants see another likely benefit in the plan. A formal procedure of personnel placement offers some insurance against a chronic hazard of the consulting business—uncompensated-for loss of experienced staffers to clients. That in itself, the experts think, is a good argument for Clark's side.



HOWARD CLARK: His scheme offers altruism plus profit.

EXPANSION

• Linde Air Products Co., division of Union Carbide and Carbon Corp., is planning to build a new radiation laboratory in Tonawanda, N.Y., intends to install a 4,000-curie source of cobalt-60.

• Interchemical Corp. has set up a new pilot plant at Hawthorne, N.J. (site of the firm's textile colors division), to augment its central research laboratories in New York City. The new installation can handle investigations in nitration, halogenation, sulfonation, reduction, oxidation, condensation, amination, alkylation, etc. Safety feature: glass windows that automatically open when atmospheric pressure rises by 10 lbs./sq. in. or more.

• Oak Ridge Institute of Nuclear Studies has purchased a 38-acre tract in Oak Ridge, Tenn., for construction of permanent educational and research facilities.

• Celotex Corp. has acquired a 12-acre site in Des Plaines, Ill., to expand its research facilities. Structures on the site have 60,000 sq. ft. of space.

• Union Carbide and Carbon Corp. has exercised an option to purchase a 142-acre farm near Raleigh, N.C., as a site for experimental work on agricultural chemicals. The company has also recently formed Union Carbide Research Institute to engage in basic scientific research. To be located on the firm's Westchester property near Tarrytown, N.Y., it will be headed by Augustus Kinzel, vice-president—research.

• A new unit for fundamental investigations in the dielectric properties of matter has been established at National Bureau of Standards (Washington, D.C.). Called the Dielectrics Section, it will be headed by John Hoffman. Work will include research in polymeric systems, fundamental studies in molecular and ionic crystals, direct current conductivity of dielectrics.

PRODUCTS

Tranquilizer: Chas. Pfizer & Co. (Brooklyn, N.Y.) is out with a new *Rauwolfia*-derived drug for use as either a tranquilizer or antihypertension agent. Called Moderil (chemically, it's rescinnamine), it's said to be as effective as other *Rauwolfia* derivatives but with fewer and milder side effects.

•

Pure Solvent: Newly available from Fisher Scientific Co. (Pittsburgh) is a high-purity reagent grade of dimethylformamide. It's useful as a reaction solvent for amino acids, in chromatography, and in nonaqueous titrations.

•

Lactase Assay: Mann Research Laboratories (New York) now offers high-purity *o*-nitrophenyl-β-D-galactoside for assaying the activity of galactosidase (lactase) used in studies of protein synthesis.

•

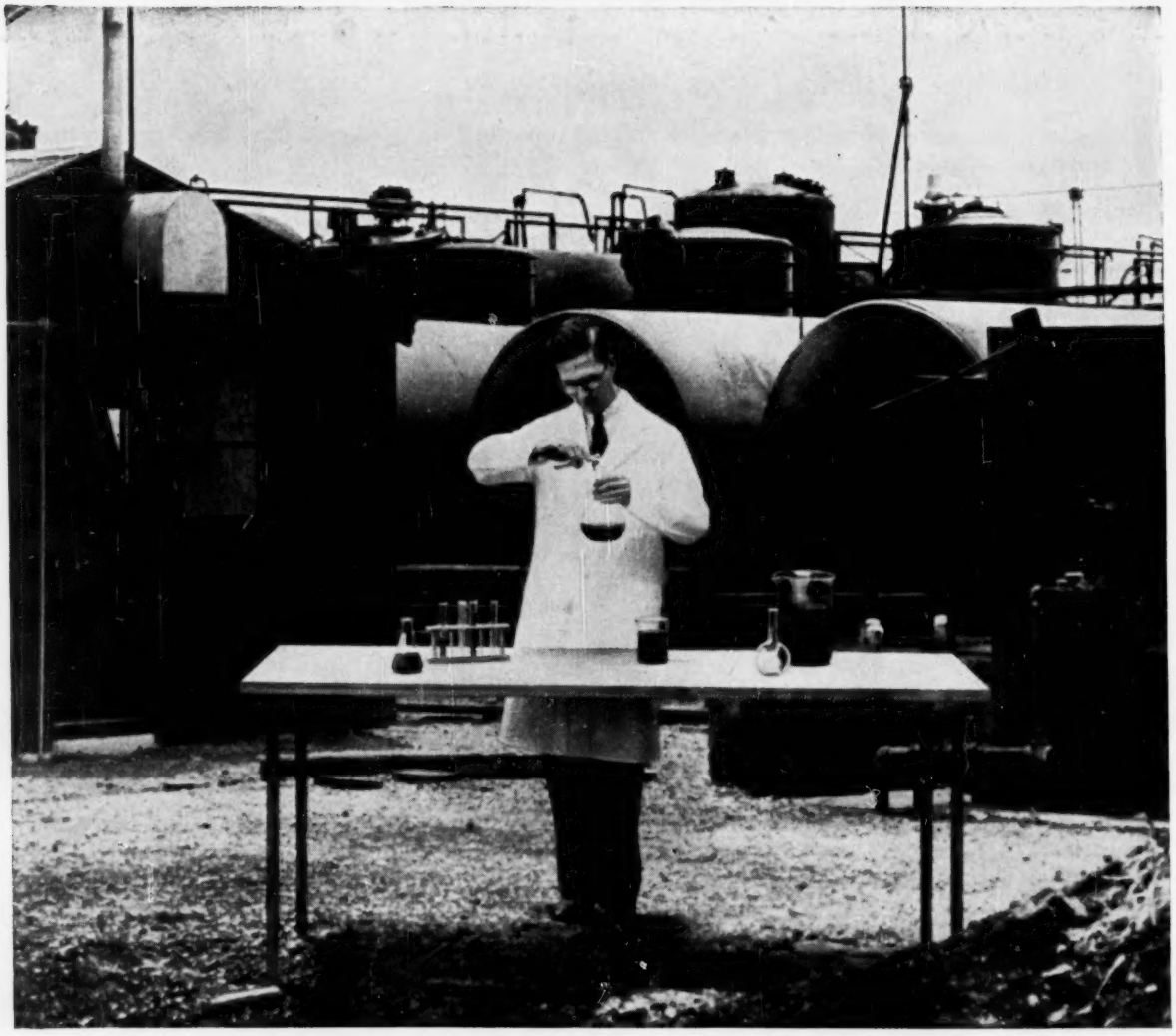
Tetracycline Offshoot: Bristol Myers Co. (New York) is out with a new form of the antibiotic tetracycline that's said to be superior to the older type.

The new product is in the form of a complex of phosphate salts of the drug (the older product is a hydrochloride salt), reportedly gives about double the "blood level" of the older type, concentrates much faster in the blood.

PROJECTS

• Olin Mathieson Chemical Corp. (Niagara Falls, N.Y.) has recently been awarded a $2,800,000 Air Force contract for development of special fuels.

• A new, two-year research program on the use of rhenium in electron tubes is now under way at Battelle Memorial Institute (Columbus, O.). The project is sponsored by the Air Force's Cambridge Research Center (Cambridge, Mass.).



What's a chemist got to do with tank cars?

Liquid level—vapor action—types of linings—temperature factors—the presence of impurities . . . these are a few of the considerations which the chemist must evaluate. It's the chemist's job to see that bulk liquids are shipped in the cars equipped to carry his products. The knowledge gained from years of hauling liquids in bulk enables General American to meet the chemist's exacting requirements—to assure that corrosion of the cars will be minimized and product contamination prevented.

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Newsletter

CHEMICAL WEEK
January 5, 1957

Be sure to take steel into account in your plans for the new year.

Steel has been tight for some time, of course. But it's getting tighter all the time. Equipment makers and construction firms already report that it is cramping their 1957 style.

Toughest items to get: hot-rolled plate, seamless pipe, structural pieces. Delays are running from one to four months—and getting longer. Mill orders on seamless pipe call for 18-20 months' delivery on the East Coast, 3 years in the Southwest, 5 years in the West.

Here's how the situation shapes up and what it means to the supply of chemical equipment and to chemical construction schedules:

• **Hot-rolled plate.** This is at the very heart of the shortage. No new plate facilities have been added since the end of World War II. And the tremendous postwar industrial expansion has taxed existing capacity beyond all bounds.

Compressors, pressure vessels, tanks are items that will be hard-hit. One big plate user in the chemical industry now estimates that he will be able to get only half of what he needs to meet projected requirements.

• **Seamless Pipe.** To a certain extent, the shortage of seamless pipe is an off-shoot of the plate shortage. But that's not the whole story—even if there were enough plate to go around, there would not be enough pipe capacity to handle all the demand.

Seamless pipe has grown in favor in recent years. But now some companies are beginning to backtrack, using welded pipe (which is plentiful) except in those cases where seamless is essential.

In the East, it's still possible—by shopping around—to pick up some welded pipe. But fabricators say they just can't get all they need, particularly in larger-diameter pipe.

• **Structurals.** The supply of structural steel is slightly better than that of the others. Some big users say the capacity is there and that it's only a question of time before it catches up to demand. They feel that by the end of the year supply and demand should be in fair balance.

But that's projected on the status quo. New developments (like the proposed big highway construction program) could keep it off balance indefinitely.

And even the end-of-the-year-estimate is cold comfort to some firms. One engineering construction firm says delays in structural deliveries are adding two months to each job. A design firm says it is now forced to commit itself for steel purchases before engineering design is completed. That means it can't get competitive prices on a specific design.

But the shortage of structural steel is not unduly alarming most chemical firms. For one thing, they have lots of lead time. For another, the question of putting up the structure can be largely academic if the equipment that goes inside isn't available.

What are they doing about it? Some companies admit they are paying premium prices for steel. Others have resorted to such methods as buying billets in one place, having them rolled in another. Still others are finding they can get along with different types of steel than those that are in shortest supply. At least one major steel firm is encouraging customers to use low-nickel alloys to stretch output of particularly scarce stainless.

Steel companies are expanding. But new capacity won't be a factor for another year at least. Then, too, it takes steel to make steel. And steel expansion itself will siphon off a portion of the available supply, temporarily making steel even tighter.

What caused the shortage? Some of the steel companies shy away from the word "shortage." They prefer to talk in terms of "unprecedented demand." They point out that, with few exceptions, steel mills are operating at 100% capacity. Some equipment makers bear this out. They say that it's their own capacity—not steel's—that's the bottleneck.

They're in accord that the steel strike the past summer had little to do with the present supply situation. More important, they feel, was the long Westinghouse strike, which built up a big backlog of electrical equipment that was slated for steel mills.

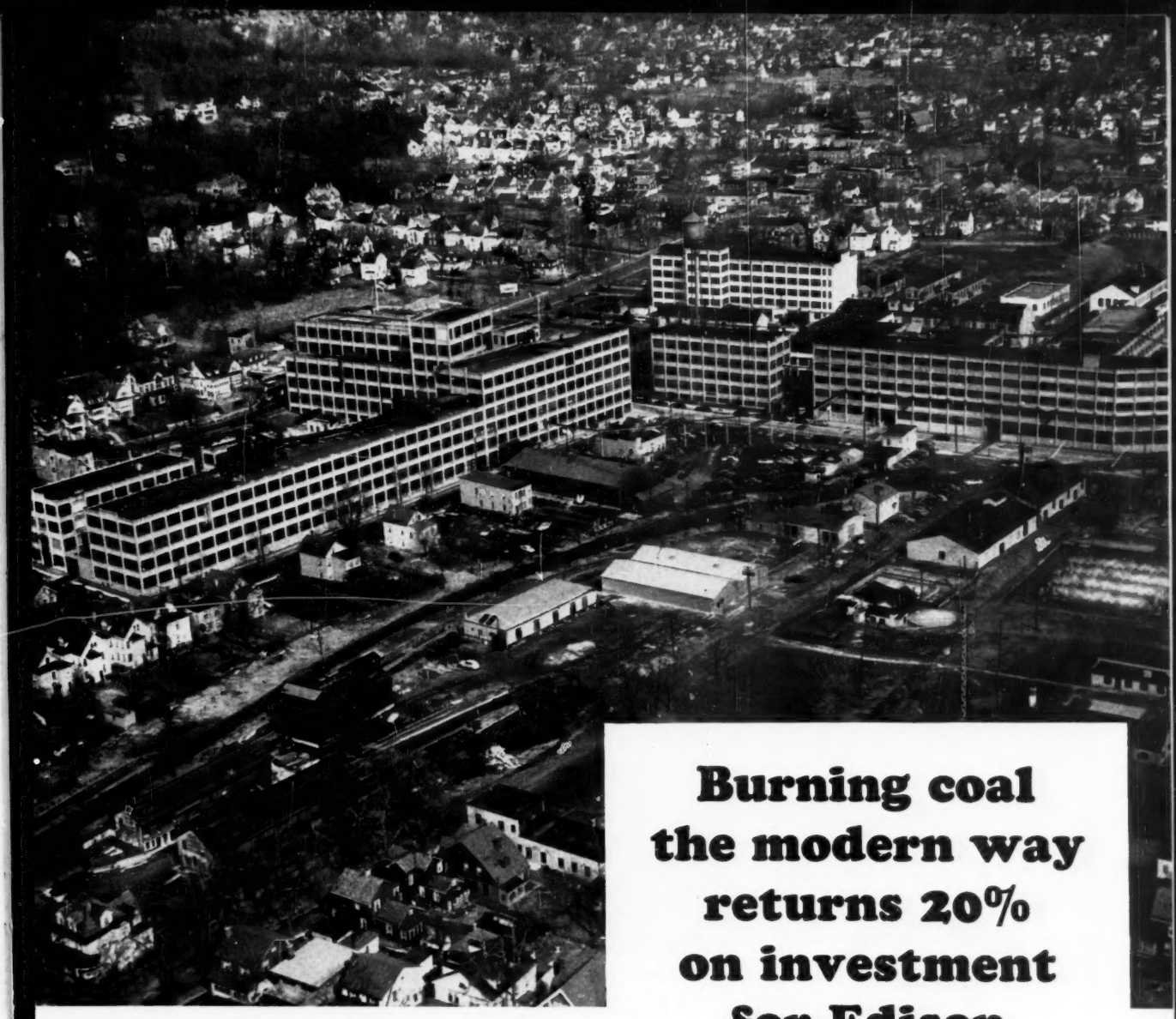
What's the outlook? Steel prices have already gone up about 7% since the wage hikes last summer. It's hard to see how they can do anything but go even higher this year.

The important factors to watch, though, are the highway construction programs, railroad-car building, tanker building, pipeline construction and automobile production. Their activity and the rate of steel's expansion will tell the story.

•

General Electric's Irrathene irradiated polyethylene completed its 2½-year semiworks apprenticeship this week. Newly constructed facilities at Pittsfield, Mass., will boost Irrathene output from 300,000 to 1.6 million lbs./year, allow expansion to 3.2 million lbs./year.

The secret of creating stable cross-linking by irradiation (electron bombardment can also cause degradation of plastics) lies in the choice of ingredients used for modifying the polyethylene resin. GE isn't ready to disclose the exact formula, says only that the vital modifiers are antioxidants similar to those conventionally used in rubber.



Burning coal the modern way returns 20% on investment for Edison

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Designing and building hundreds of heating and power installations a year, qualified engineering firms can bring you the latest knowledge of fuel costs and equipment. If you are planning the construction of new heating or power facilities—or the remodeling of an existing installation—one of these concerns will work closely with your own engineering department to effect substantial savings not only in efficiency but in fuel economy over the years.

facts you should know about coal

In most industrial areas, bituminous coal is the lowest-cost fuel available • Up-to-date coal burning equipment can give you 10% to 40% more steam per dollar • Automatic coal and ash handling systems can cut your labor cost to a minimum. Coal is the safest fuel to store and use • No smoke or dust problems when coal is burned with modern equipment • Between America's vast coal reserves and mechanized coal production methods, you can count on coal being plentiful and its price remaining stable.

The firm of Thomas A. Edison, Inc., West Orange, N. J., was faced with a common problem—rising steam plant costs. A thorough survey indicated the need for modernization of the power system. As a result, six 30-year old boilers were replaced with two 60,000 lb./hr. units. FD and ID fans, pneumatic ash systems, coal pulverizers and related equipment were installed.

Modernization has paid off at Edison! Steam-generating capacity per sq. ft. of boiler room space has been doubled, labor costs have been cut, fuel costs are down, boiler efficiency is up 16% and modernization gives a 20% annual return on a net investment of 2.7 mils per BTU!

For further information or additional case histories showing how other plants have saved money burning coal, write to the address below.

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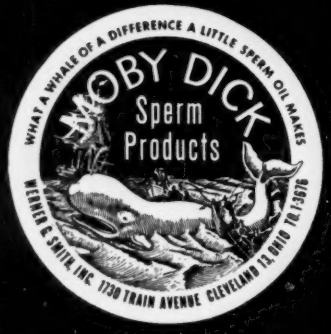
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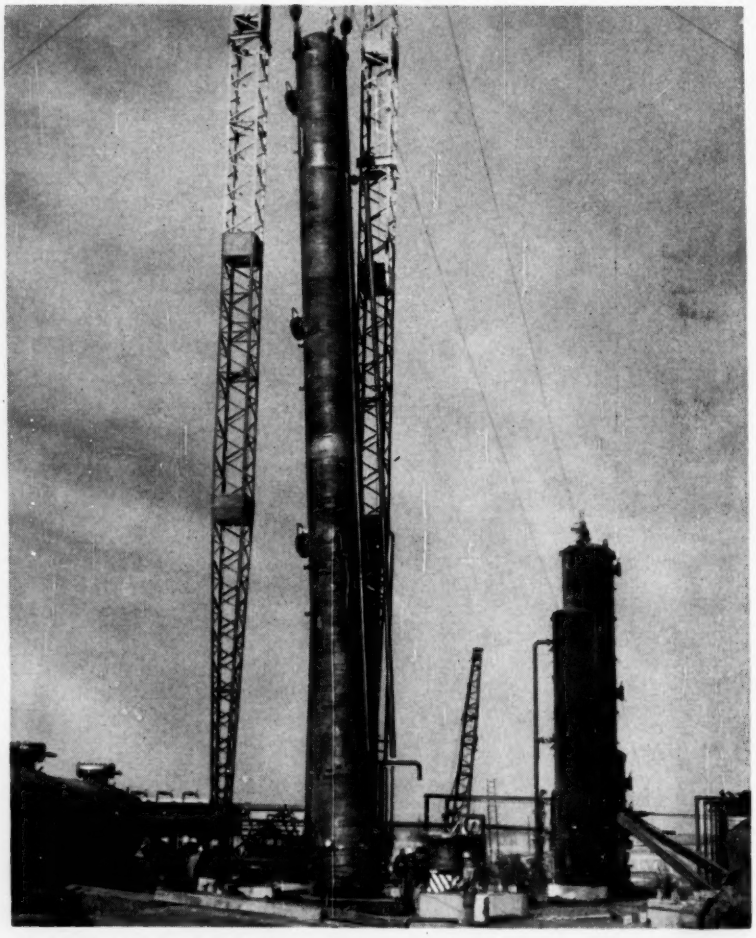


TOWERING new liquefied petroleum gas units pace . . .

LPG's Billion-Gallon Boost

Total sales of liquefied petroleum gas leaped to nearly 7 billion gal. in '56—and chemical manufacturing —the second-largest outlet—led all other categories in the gain over '55 consumption.

Total LPG consumption was boosted an unprecedented 1,001 million gal., sent total sales soaring 16.7% higher than in '55—from 5,996 million to 6,997 million gal.

These general advances are further detailed in the annual LPG report put out this week by Phillips Petroleum; the authors again this year: George Benz, Paul Tucker and W. F. DeVoe.

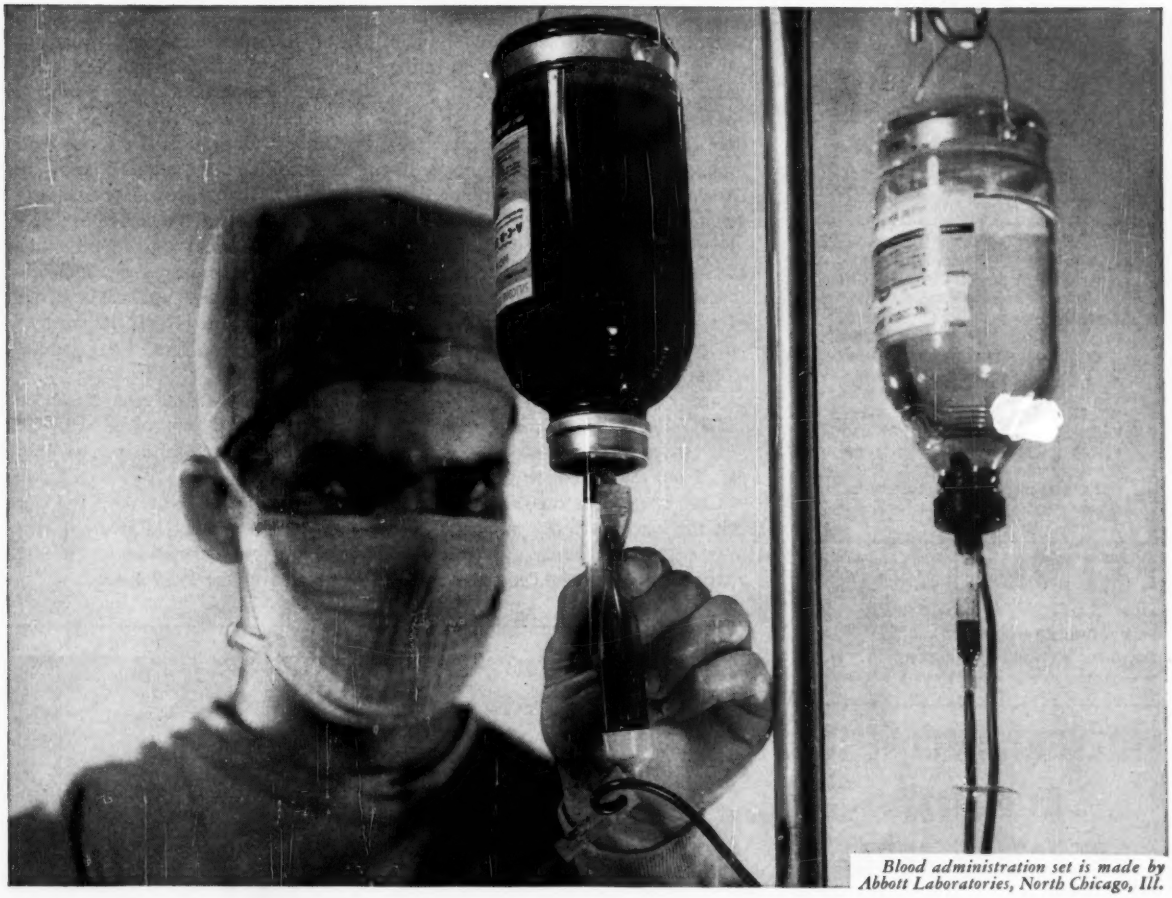
Chemical Cut: Consumption of LPG in chemical manufacturing increased a healthy 20.1%, climbed from 1,367 million gal. in '55 to 1,642 million last year. While the percent of gain fell far short of the 30.2% increase scored in '55, it was well ahead of the growth rate reported for the several years preceding 1955.

However, the more recent increase is noteworthy for two reasons: (1) it was made in spite of the steel strike, which retarded construction of new chemical plants, and (2) it was a larger percentage of gain than was made by any one of the four other outlets.

The growing demand for polyethylene was again (as in '55) largely responsible for the upsurge in chemical LPG needs; and, incidentally, the large number of polyethylene plants now under construction points to further

Another new development using

B.F.Goodrich Chemical *raw materials*



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Another major benefit can't be seen. Although Geon is recognized as the standard for uniform high quality in polyvinyl resins, its cost is reasonable. Thus the whole unit is disposable—safer by far than equipment which must be sterilized, packaged, inspected, and stored for re-use.

Geon's quality and versatility can help *you* improve or develop products. This vinyl can be formed into a variety of things—rigid products like ductwork, or flexible products like tarpaulins . . . or it can be applied as a durable coating to other materials. It resists the effects of most acids, alkalis, solvents, and oil, can be made clear or colorful.

For complete information write Dept. S-1, B. F. Goodrich Chemical Company, 3135 Euclid Avenue, Cleveland 15, O. Cable address: Goodchemco. In Canada: Kitchener, Ont.

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substantial gains in LPG use in '57. Meanwhile, interest in other polyolefins (polypropylene, polybutylenes and polybutadiene) is mounting, and these products will undoubtedly join the list of important LPG users in the years ahead.

Large volumes of LPG also went into the production of phenols, acetone, glycols, amines, detergents, additives, alcohols, and many other oxygenated hydrocarbons. Production of nitroparaffins and derivatives, other LPG consumers, continued to increase.

Rubber Addendum: Manufacture of synthetic rubber is, of course, another chemical outlet for liquefied petroleum gas, but is listed as a separate category in the Phillips report.

LPG demand for this purpose last year increased 8.1%—to 439 million gal., from 406.2 million in '55.

Compared with the 32% jump in '55, the increase in '56 was small; but it was, nonetheless, a significant advance, considering the drop in automobile production (down almost 25% from 8 million cars in '55 to 6 million last year).

The outlook for '57: demand for LPG in rubber making will probably be strong, although last year's synthetic rubber stockpiling may have a moderating effect.

Other Outlets: The combined "chemical" and "rubber" uses for LPG in '56 comprised almost 30% of the total market; the remaining 60% went into the following general outlets: domestic and motor fuel; industrial and miscellaneous applications; and gas manufacture. Here, in brief, is what happened to these LPG markets in '56:

Domestic and motor fuel needs were up 17.8%, compared with '55, and reached an all-time high of 4,068 million gal.

Some 850 million gal. of LPG were used in '56 as fuel in internal combustion engines, representing a 30% increase over the 1955 needs.

Coral with a Stretch

NEW MAN-MADE rubbers—like Firestone's Coral, *above*—are intensifying the competitive squeeze on natural rubber markets. Reason: these synthetics closely resemble natural rubber in chemical and physical properties, should be able to duplicate the latter's performance in many applications.

U.S. consumption of synthetic rubber in '56 climbed to well over 1 million tons, accounted for 60.9% of total rubber used. This compares with 58.5% in '55, 51.6% in '54. Outlook: industry observers predict synthetics in '57 will garner 62% or more of the total U.S. rubber market.

CHEMICALS OUTLOOK

January, 1957

This news bulletin about Wyandotte Chemicals services, products, and their applications, is published to help keep you posted. Perhaps you will want to route these and subsequent facts to interested members of your organization. Additional information and trial quantities of Wyandotte products are available upon request . . . may we serve you?

PLURONIC BLOCK-POLYMERS IMPROVE RINSE-AID FORMULATIONS

The use of Wyandotte's Pluronic* series of block-polymers in the formulation of rinse aids for machine dishwashing is becoming increasingly popular. The low foam and good wetting properties of the Pluronic series enable dishes, glasses, silverware, and plastics to drain rapidly and air-dry without spotting, eliminating costly hand toweling or manual after-dipping.

In addition, the Pluronics are essentially nontoxic in this application, and their nonionic character makes them ideally suited for use in hard water or with quaternary ammonium compounds.

Many Pluronic grades have proved successful as rinse aids. The choice depends on the actual conditions of use. Clarified Pluronic L62 is generally recommended as a starting material for a testing program. Pluronic L42, L43, L62D, and L63D are also particularly promising . . . combinations of grades may also be used.

Our Pluronic Grid will prove extremely valuable in selecting the best Pluronic or combination. With the help of the Grid, formulators can save valuable research time by evaluating only those grades displaying the properties desired.

The Pluronic block-polymers may be used as rinse aids either alone or diluted with water or alcohol, depending on whether or not the injection device is equipped with a dilution tank. When water and/or alcohol is used in the formula, the amount added is usually between 20% and 60%. When water is used, or when the injector has a dilution tank, about 0.25% of a quaternary ammonium compound should be added as a preservative. If desired, vegetable dyes can be used to color the product.

The most satisfactory results are obtained when the concentration of Pluronic in the final rinse is 60 to 100 ppm, and the temperature of the water is 180° F. or higher. Injection machines have controls to let the operator adjust the concentration.

Data sheets on Pluronic block-polymers for use in rinse aids, samples, and copies of the Pluronic Grid are available. Address inquiries to Department CO for prompt attention.

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MARKETS

Industrial and miscellaneous consumption of LPG increased 10.4% last year, reached an estimated 614 million gal. Part of this increase was due to the inclusion in this category of refinery fuel gases containing LPG.

In gas manufacture, utility use of LPG maintained its upward swing, hit an estimated 234 million gal.—a 9.5% hike over the '55 demand.

Reports Revised: Comparison of the current LPG report with that issued a year ago reveals that earlier estimates for '55 have been significantly revised.

For example, the "chemical manufacturing" category now includes gas and liquid streams containing methane and ethane along with LPG. These streams have not been considered as LPG in the past, would not meet specifications for "domestic" LPG market. Their use as petrochemical plant feed stocks increased at a rapid rate during '56.

This more complete coverage of mixtures containing ethane and methane altered the estimated growth in '55 of LPG consumption for chemical uses (excluding rubber) from 20.2% to 30.2%

The increase of LPG in rubber making in '55, compared with '54, turned out to be considerably less than the 56.3% originally estimated, was revised downward to a still sizable 32%. (Demand by rubber makers in '55 was 406.2 million gal. instead of the 481 million first reported.)

Domestic and motor fuel data had been overestimated by a sizable margin; '55 consumption was a little over 3,453 million gal. instead of the 3,661 million reported earlier—represented an increase over '54 of 8.8% (not 15.3%).

LPG use in '55 for industrial and miscellaneous purposes turned out to be nearly 556.4 million gal., had increased a whopping 38.5% instead of the 7.3% first reported. More complete coverage of refinery fuel accounts for the change.

Revision of figures on LPG use in gas manufacture reversed this part of the LPG trend; instead of decreasing 10.9% in '55, compared with '54 uses, this outlet actually increased 11.4%.

These revised data point to one conclusion: LPG sales, closing out '56 at a rate of almost 7 billion gal./year, may well nudge the 8-billion-gal. mark in the new year.

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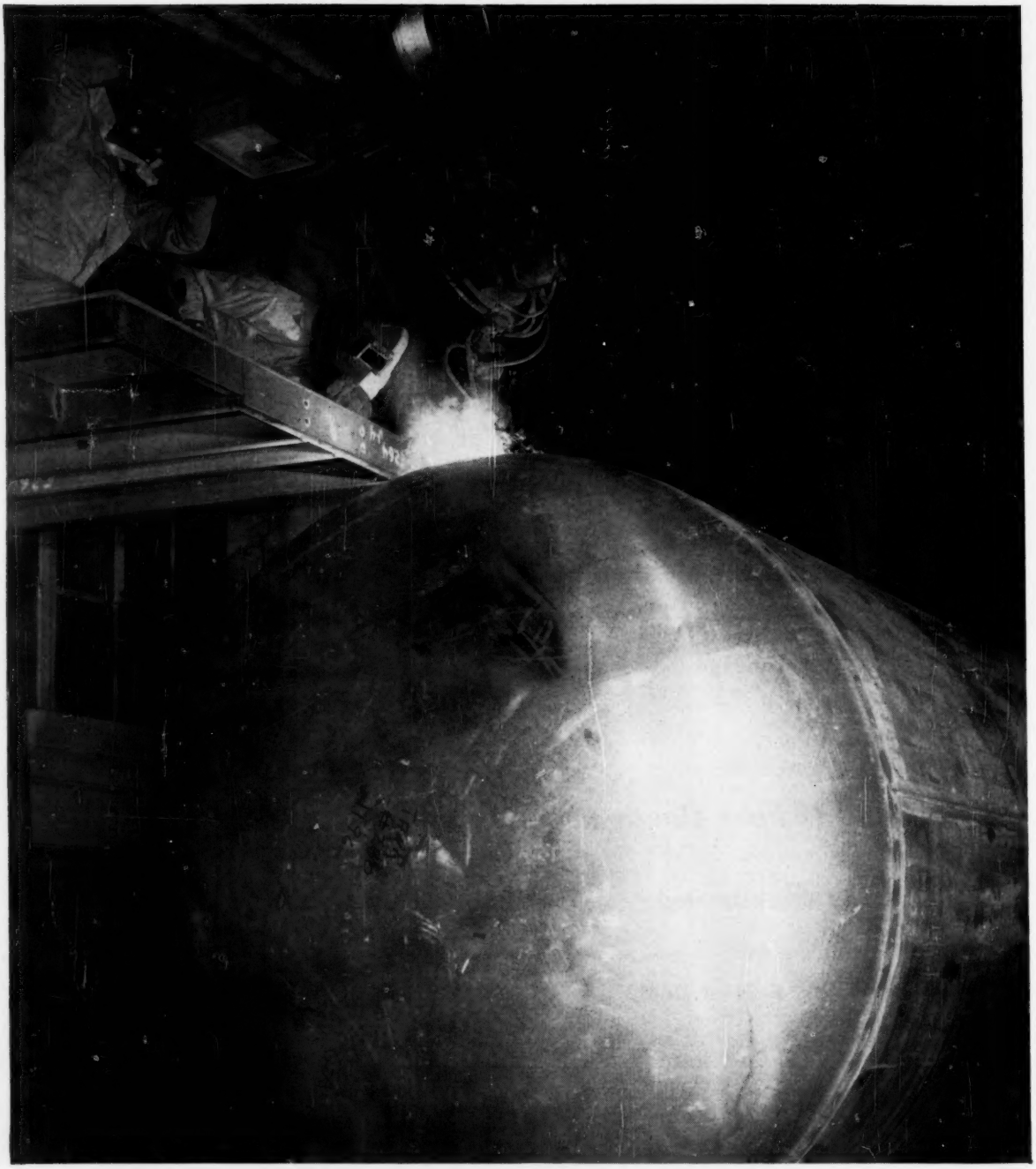

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Market Newsletter

CHEMICAL WEEK
January 5, 1957

More nickel chemical prices have been swept upward by the recent big boost of nickel metal costs. The latest boosts closely follow the first hikes, on the sulfate and on nickel anodes (*CW Market Newsletters, Dec. 15-29, '56*).

New tabs, effective Jan. 1 (bbls., dlvd.): acetate, up 2½¢/lb., to 80¢/lb.; carbonate, up a big 7¢/lb., to 80¾¢/lb.; chloride, up 2¢/lb., to 40½¢/lb.; fluoborate, up 2½¢/lb., to 49½¢/lb.

•

Selenium buyers will get the benefit of price cuts beginning this week. Due to a recent major increase in output, American Smelting & Refining is dropping (by $3/lb.) the price of high-purity selenium to $15/lb., in quantity lots, f.o.b. Baltimore.

The firm also cut the price of ferroselenium; new listing: $12.75/lb., down $3.50/lb.

At the same time, the company is re-entering large-scale production and sale of commercial-grade selenium powder (99.5% pure). Price: $12/lb., delivered in the U.S., for minimum 100-lb. lots.

•

Sales of plastic pipe will hit $250 billion within the next decade, predicts Wm. T. Cruse, executive vice-president of the Society of the Plastics Industry. Plastic pipes popped into prominence some six years ago; since then, sales have increased steadily, climbed to $45 million in '55 and to $55 million in '56.

Footnote on foreign plastic pipe production: Japan now produces more than 1,000 tons/month; a key factor behind the growth of Japanese polyvinyl chloride output to the current 45,000-tons/year rate, from 1,000 tons in '50.

•

First shipments of thorium are now being made by Metal Hydrides (Beverly, Mass.), but orders for the high-purity crystal bar metal are limited to 10 lbs. Larger quantities will be forthcoming when production expansions—now planned—are completed.

•

Need lecithin for use as an emulsifying or antisettling agent? Spencer Kellogg (Buffalo, N.Y.) is commercially producing and distributing the material (under the tradename Kelecin) for these and other uses. Three grades of both solid and liquid lecithin are available: natural, bleached, double-bleached.

•

And there's a new source of barium carbonate. A new unit at Sherwin-Williams' Ozark plant (Coffeyville, Kan.) is in large-scale production of a form described as a "high-purity" technical-grade carbonate, low in sulfur and soluble salts.

Anticipated boosts in synthetic fabric prices *(CW Market Newsletter, Dec. 29, '56)*, are in the making, reportedly will range from ¾¢ to 2¢/yard. The reason: Du Pont's synthetic fiber price increases—(averaging about 5% on nylon, Dacron, and acetate filament yarns—are causing other producers of synthetics to follow suit.

Chemstrand nylon filament yarns—both standard and second quality—are up; increases on the standard-grade range from 4¢ to 42¢/lb., depending on specifications.

Price labels on rayon filament yarns made by Industrial Rayon are hiked 3¢ to 5¢/lb.; Eastman Chemical and Celanese upped tabs on acetate filament by the same amount.

Another price boost in store for the textile industry: major dyestuff producers reportedly will raise dyetags by some 18%.

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Increased shipping costs due to blockage of the Suez Canal are reflected in Canadian rubber prices. Dunlop (Canada) is increasing prices of all rubber latex foam 7%, reports that costs of crude latex from the Malay Peninsula have gone up 28% in the past five months.

•

Soaring output of pesticides in '56 sent carry-over stocks well above the corresponding '55 levels, according to a joint survey by the U.S. Dept. of Agriculture and the National Agricultural Chemicals Assn.

Producers' stocks (as of Sept. 30) of chlorinated hydrocarbons were up nearly 100%, compared with a 20% rise in formulators' holdings. DDT producer stocks rose 78%; those of formulators, a relatively low 46%.

In addition, producer stocks of undiluted benzene hexachloride increased 100%; calcium arsenate stocks, a big 178%. Lead arsenate, however, was on the downside—producer and formulator holdings were down 3% and 14%, respectively.

SELECTED CHEMICAL MARKET PRICE CHANGES—Week Ending December 28, 1956

	Change	New Price
UP		
Nickel acetate, bbls., dlvd.	$0.025	$0.80
Nickel carbonate, bbls., dlvd.	0.07	0.8075
Nickel chloride, bbls., dlvd.	0.02	0.405
Nickel fluoborate	0.025	0.495
DOWN		
Tin, metal (Straits)	$0.02375	$1.0225
Stannic chloride, anhyd., dms., wks.	0.015	0.799
Stannous sulfate, dms., wks.	0.017	0.982

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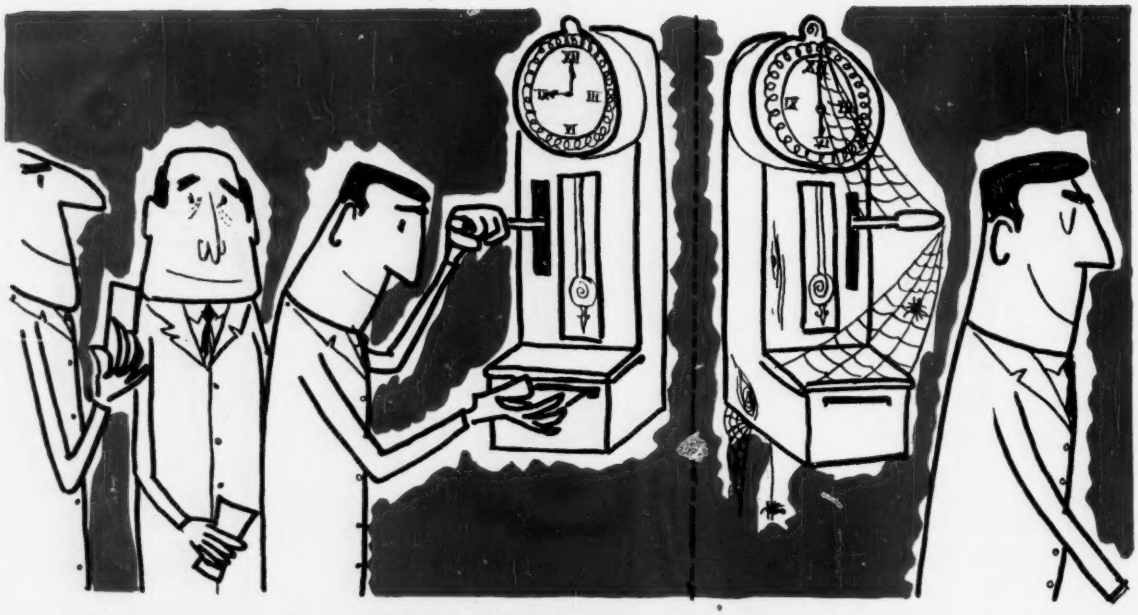


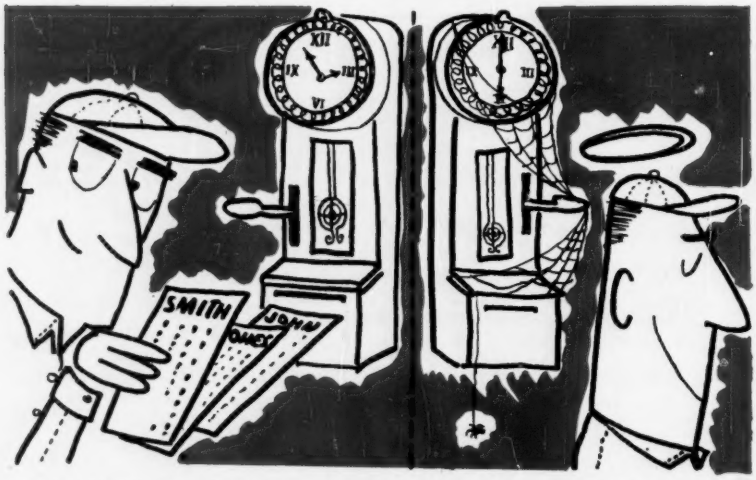
BOOSTING MORALE: Pile-ups at the gate are a thing of the past at many chemical plants where . . .

Time Clocks Are Punching Out

"The time clock is one of the biggest, most unnecessary clubs ever invented to hold over a worker's head." Those words from a production executive of a company that still uses time clocks exaggerate, of course. But they reflect a trend in thinking that some industries have already put into action. And chemical companies lead the way.

Du Pont, for example, hasn't installed a time clock in any plant built since 1950, has removed them from many older plants. Today, only five of its more than 70 plants still use them.

Union Carbide hasn't put a time clock into any plant built within the past couple of years. Spencer Chemical is eliminating time clocks wherever it is practical, has none in two of its five plants now. Corn Products Refining eliminated them completely about six years ago. And the story is the same with others.



APPEALING TO PRIDE: A mechanical device can be cheated. When it's removed, pride in the job is given a chance to take over.

Ousting Tradition: In ousting time clocks, these plants are making a sharp break with tradition. The time clock has been almost an institution. (One large chemical company has insisted for years that everyone from president to floor sweeper punch the clock.)

Yet, most firms gave up some of this tradition some time ago when they dropped clock-punching for all salaried employees exempt from the wage-hour law (employees who don't have to be paid for overtime work). And, more recently, many widened the breach by allowing all nonexempt salaried employees to ignore the time clock.

But the production man—the worker paid an hourly wage—has remained a clock-puncher in most plants. As one company puts it: "Production workers are inclined to think of themselves as being paid for time spent on the job. White-collar workers are inclined to think in terms of the job performed. In keeping time clocks in the plant, our policy is consistent with the outlook of these two groups."

Then why have some eliminated

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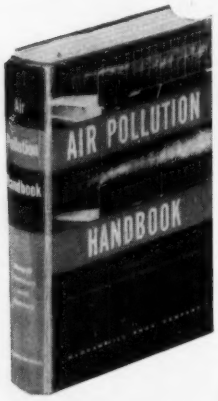

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clocks? Morale is the answer. Says Du Pont: "People just don't like clocks." "We are recognizing the individual—giving him stature," is Carbide's reply.

Another says quite simply: "The workers don't have to fool around with a mechanical check. Now they can come in to work just like the executives. It really makes them feel good."

And it saves time. There is no more confusion, milling around at the gate, lining up to punch in and out.

Improving Relations: With time clocks out, other records must be kept. One of two systems is generally used: one has the foreman (or supervisor) keep the time sheet, the other lets the men keep their own records. In either case, the foreman is the key man. It's up to him to verify the time-log before it is sent in to the payroll department. This means that he must make certain that his men are on the job.

Most companies agree that the foreman is the best man with whom to place responsibility for creating an environment in which workers will want to get to work on time and put in a full day. The more direct contact a good foreman has with his men, the better are the chances of good working conditions. It may seem to be extra work for the foreman. But as Carbide puts it: "The foreman is only assuming a responsibility he should logically have."

(This policy of more direct contact can be carried a step beyond the keeping of time sheets. For example, Carbide, at its Long Reach Silicone Division plant, allows the foreman to pay his men. Others have considered the move, but most shy away. As one company points out: "The foreman usually has enough on his hands. Having him carry a man's pay around can be quite a responsibility. If the labor force is large, it can be impractical, too." Carbide agrees, has tried it only at Long Reach.)

Where to Stop? One heavy-chemicals firm's vice-president of manufacturing draws a line of demarcation when considering time clocks: "I wouldn't fool around putting time clocks into plants with 100 or fewer men," he says. "But they are a must for plants with a larger number of employees."

Another company says it might do

away with time clocks some day. But if it does, more shift supervision will be required to handle its 500 hourly workers.

Yet, some say that the size of the working force is not necessarily a barrier to removing time clocks. But there are other considerations that vary from plant to plant. For this reason, companies like Du Pont and Union Carbide don't have a company-wide policy, leave the use of clocks up to individual plant superintendents.

Bob McKinney, Spencer's Chicago Works manager, explains that his company is inclined to do away with time clocks whenever it is practical to do so. But he adds, "We do have situations within the company that we feel at this time preclude the complete abolition of time clocks. Yet, even where we use time clocks, it is mainly to audit attendance. Payrolls are made up from the labor distribution reports completed by supervisors and foremen. And the labor distribution report governs, even though there might be a slight variation between that and the time card record."

Useful Still: Time clocks still do some jobs better than other devices: Firms often have to split their labor over several process centers—have men work on different jobs during the same day. Maintenance workers are a good example: some punch a time clock in each area visited during the day. This helps the cost accountants keep labor costs straight.

"We know our employees don't like to punch the time clock. But it's the most economical and the simplest means of keeping the records of hours worked," is a typical comment.

Too, a time clock record can be valuable when disputes arise, a spokesman for one firm points out: "In the event we take disciplinary action against a man, a report outlining the circumstances must be filed with union officials. If time is involved, the time clock card provides virtually indisputable proof."

But another warns of the pitfalls here: "Every sound accounting procedure has a double checkpoint. The time clock is one mechanical check on time-keeping. By removing the clock, you have removed a checkpoint. But remember, the time clock is only a mechanical device—it is not infallible and can easily be cheated."

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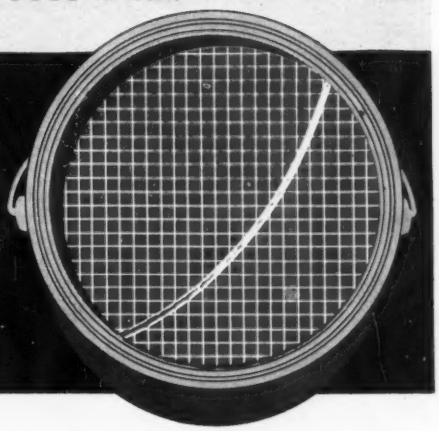

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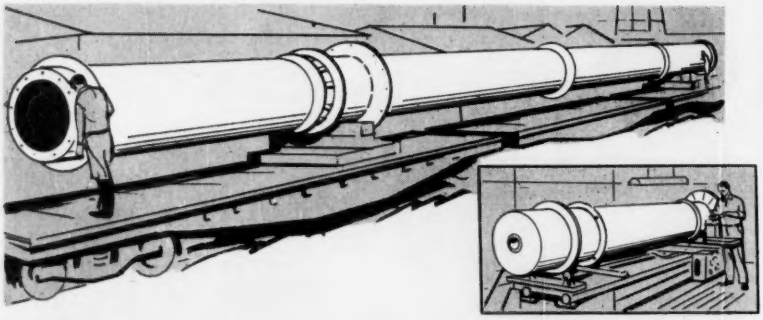

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PRODUCTION

ample, Corn Products' W. W. (Wally) Daley says that eliminating time clocks met with some resentment from the union at first. "However," he adds, "they [the union] were cognizant of the many abuses inherent with time clock systems—such as employees sneaking out, punching other employees out, and so forth."

Honor Wins: Most companies agree that no time-keeping system is free from abuses. "There are always a few who will cheat, no matter what you do," is a typical comment. But clockless systems often have a psychological advantage: they appeal to a basic sense of pride and honor in the worker.

Carbide proved this at some plants when clocks were removed. The clocks worked on the tenth-of-an-hour principle, gave the men a six-minute break in punching in. Many took advantage of the extra time. But, when the clocks were removed, Carbide found many appearing on the job early.

However, most of the benefits companies pick up are too intangible to measure accurately. Yet, as Corn Products' Daley puts it: "We would certainly be reluctant to go back to time clocks." And enough firms echo his words to be a fair indication that the heyday of time clocks is fast running out.

EQUIPMENT

Self-Powered Feeder: Wallace & Tiernan, Inc. (Belleville, N.J.) has introduced the Series A-619 Merchen feeder, which controls the flow of dry, free-flowing materials by a system of balanced weights, requires no electrical connections unless automatic shutoff is desired. The unit's feed gate is opened or closed by a counterweight balanced by an impact pan on which the material falls. Seven sizes control feed rates of 5-2,000 lbs./minute, at accuracies from 1% at full scale to 4% at one-quarter scale.

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Fast Vacuum Pumps: Consolidated Electrodynamics Corp.'s Rochester Div. (Rochester, N.Y.) is now manufacturing a new line of Roots-type vacuum pumps under exclusive license from Heraeus, of Hanau, Germany. Said to be the fastest mechanical pumps in the 10^{-1} to 10^{-5} mm. Hg range, the units come in 6 standard sizes covering maximum speed ranges from 92 to 4,900 cfm. Pump motors

operate within the vacuum, thereby eliminating the need for shaft seals.

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Gas Purifier: A catalytic-type gas purifier-dryer, Deoxo Puridryer MS, is now available from Baker & Co., Inc. (Newark, N.J.). It's designed to handle such gases as hydrogen, nitrogen, argon, neon and saturated hydrocarbons—provided a 2:1 ratio of hydrogen to oxygen is present for catalytic reaction. The drying system employs a Linde molecular sieve in place of the previously used activated alumina, registers gas dew point readings below —100 F.

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Pressure Mixer: For air-free blending of catalysts and additive materials, Pyles Industries, Inc. (Detroit, Mich.), offers its Semco pressure mixer in 5 models from 1- to 5-qt. capacity. Mixing action is provided by two double-acting cylinders, which force out entrapped air, blend materials for a predetermined number of cycles, and deliver it under pressure into a polyethylene cartridge.

•

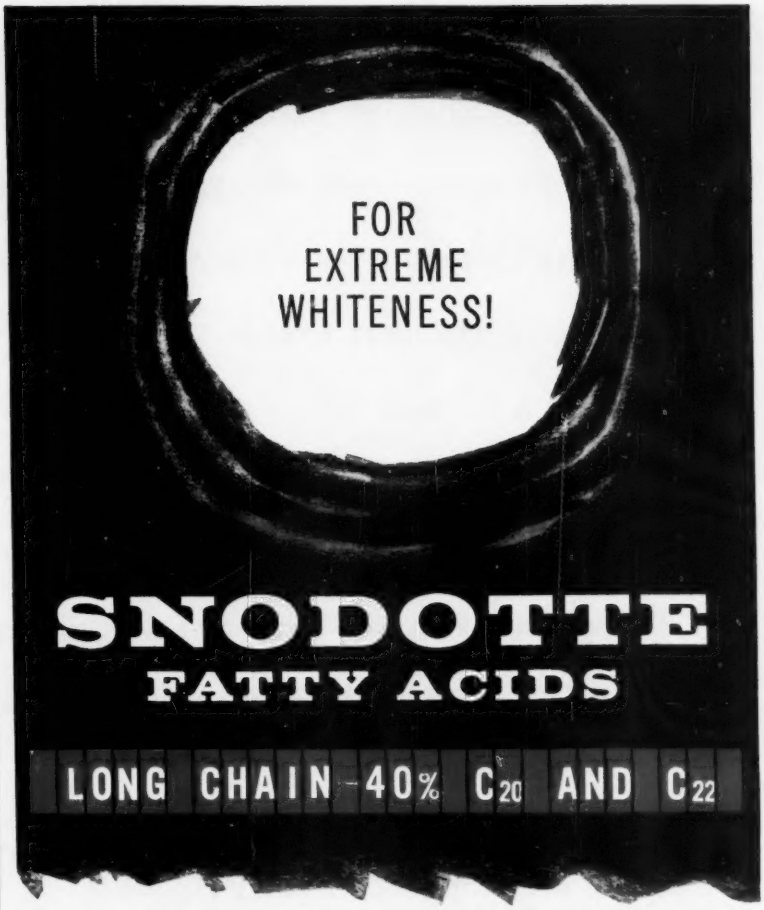
Flexible Duct: The Wiremold Co. (Hartford, Conn.) is out with a new flexible air duct—its Type 47-1D—designed to handle corrosive fumes from chemical processes. It's constructed of vinyl-coated glass fiber fabric supported on a spiral of corrosion-resistant stainless steel. The duct is easy to cut and install, says Wiremold, is readily formed into 90- to 180-degree bends.

•

Tank Liner: H. N. Hartwell and Son, Inc. (Boston), has developed an expansion liner sheet that is the industry's first and only tank liner with built-in thermal compensation, it says. Made of Boltaron 6200 unplasticized PVC, the sheet is designed to absorb thermal expansion and contraction by movement of built-in corrugations. The lining comes in 30x60x$\frac{3}{16}$ in. sheets, can be used in wood, metal or concrete tanks of any size or shape.

•

Tubing Tools: Two new tools for nylon tubing—one a cutter, the other a flaring tool for making 45-degree flares for tube joining—are offered by Imperial Brass Mfg. Co. (Chicago). The cutter, it's said, eliminates fracturing, can be used on nylon and other plastic tubing of $\frac{1}{8}$- to $\frac{3}{4}$-in. O.D. The flaring tool takes tubing from $\frac{3}{16}$- to $\frac{5}{8}$-in. O.D.



If you make candles, shaving creams, textile chemicals, shampoos, and the like, you are probably continually seeking an extremely white fatty acid for easy-to-merchandise products.

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Iodine Value	3 max.
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Average Molecular Wt.	282 to 289
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Ocean freight rates, inching up over the past several years, may this month jump a spectacular 40% above current levels. But a recent court decision that dual rates established by agreement among Freight Conference line operators are a "form of discrimination" and are illegal, may well offer succor to chemical shippers.

Storm Signals for Shippers

Chemical companies will be shelling out more dollars for ocean freight again this year. By mid-January, rates may be up as much as 40% over current rates. An additional headache in sight: companies can expect delays in sending and receiving goods. Ship space was tight before the Suez Canal closed, now it's even tighter.

Some relief is in sight, however. The government is beginning to release some of its reserve fleet tonnage to private companies. But, it will be 2-3 months before any effect will be felt.

The short supply of ships not only means higher freight bills, but it's also sure to result in a cutback in chemical products sold abroad—buyers will be spending more to get less goods.

The most rapid rise in rates has been on bulk commodities (e.g., fertilizers, phosphates) that are carried by tramp cargo ships. Tramp rates fluctuate in ratio to the demand for the tonnage—and changes are made almost hourly.

Hardest hit, of course, are cargoes that normally moved through the Suez Canal. Shipping companies figure it takes about 20 days longer and costs about $60,000 more on a round trip from the Atlantic Coast to India by way of the Cape of Good Hope than for a similar trip via the Suez. And shippers are paying the difference.

The rate for moving fertilizers (via tramp) from Baltimore to Karachi, for example, has jumped from about $5/ton before the canal was put out of operation, to about $30/ton. It's likely to go even higher.

But tramp ship rates aren't the only ones going up. By mid-January, all shipping lines will have higher rates, some, as mentioned, higher by as much as 40%. Part of the increase is being levied as a temporary measure (to offset the added cost of bypassing the Suez Canal), but up to 20% of the boost will be a permanent hike.

A bright side of the picture is the reactivation of government reserve ships to help ease the shortage. Right now, some 78 cargo ships have been authorized to be taken out of mothballs, and shipping interests are working hard to get more.

Though most of the reserve fleet ships will be used to haul government-aid cargoes and coal, this will help indirectly by lightening the over-all tonnage load. Even with this slackening, though, there's little hope for a cut in rates. Demand for ships will still be strong enough to keep rates high. In addition, there is this factor: the cost of operating ships is skyrocketing, and that means ships must earn more to bridge the cost-profit gap.

Shipping lines that maintain regular schedules between the U.S. and points beyond the canal expect to be one trip behind schedule by about February. But, there is little they can do about it. They don't have extra ships to put on the run to compensate for the longer sailing times.

Besides the short supply of ships and upward turn of rates, a major shake-up in traditional ocean freight-rate practices may be in the offing. A district court in Washington, D.C., recently held that the dual-rate system used by most shipping companies —whereby a shipper is given a 10-20% cut in rates if it will agree to ship exclusively with a particular shipping conference—has been held illegal. The issue is sure to be appealed to the Supreme Court; but if the high court upholds the decision, it will mean a major reshuffle of rates, with ship-

pers being directly affected.

Ocean freight rates fall into three categories—conference, nonconference and tramp. Biggest block of world shipping, by far, operates under some 100 rate-fixing conferences that cover virtually all trade routes of the world.

Under the conference system, ship operators under all flags voluntarily join and decide what rates they will charge for commodities moving over a particular trade route. Normally, there's only one conference for each trade route, but out-bound shipments may be covered by one conference and in-bound movements by another.

Most conferences covering ships that operate to the U.S. have installed a dual-rate system that gives shippers lower rates if they agree to ship all cargoes exclusively with that conference; foreign conferences use a similar system, but call it "loyalty bonuses" and give deferred rebates to shippers.

Nonconference rates are charged by a few lines that provide regular service, but refuse to join the rate conferences. These rates are normally 5-10% less than conference rates.

Tramp rates fluctuate directly with the demand for tonnage and change continuously with operators charging what the traffic will bear.

The big hassle over the dual-rate system has been between the nonconference line operators and the conferences. The charge is that the conferences sew up most of the ocean traffic with dual-rate agreements, thus make it tough for the nonconference operators to obtain shipments even at the lower rates. One reason is that service to more areas of the world is available to a shipper through conference ships than is available through nonconference lines.

The dual-rate system may be in for an upset, however. Isbrandtsen (largest U.S. operator) has been fighting it for years, but until now hasn't made much headway. The Federal Maritime Board favors the dual rates on the grounds that it guards against rate wars.

Recently, however, in a case brought by Isbrandtsen against the Japan-Atlantic and Gulf Freight Conference, the court of appeals for the District of Columbia held that dual rates were illegal. Reasoning behind the decision: dual rates are a form of discrimination between shippers, and as such run counter to the Merchant Marine Act of 1936.

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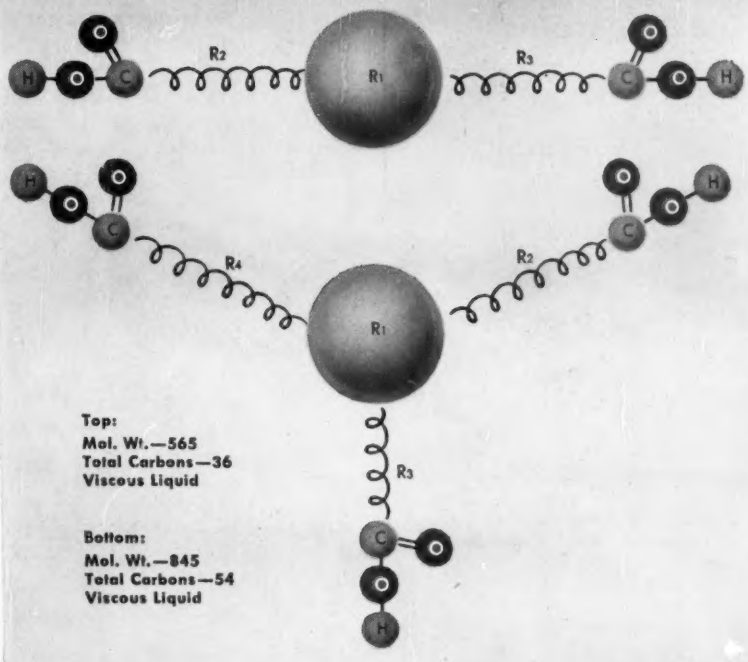

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Seven Now, More Later

Higher railroad freight rates that went into effect last week following approval by the Interstate Commerce Commission have set the pace for more to come.

Tariffs on Eastern railroads rose 7%, Western roads, 5%. Southern lines are expected to get a similar boost after hearings on Jan. 7.

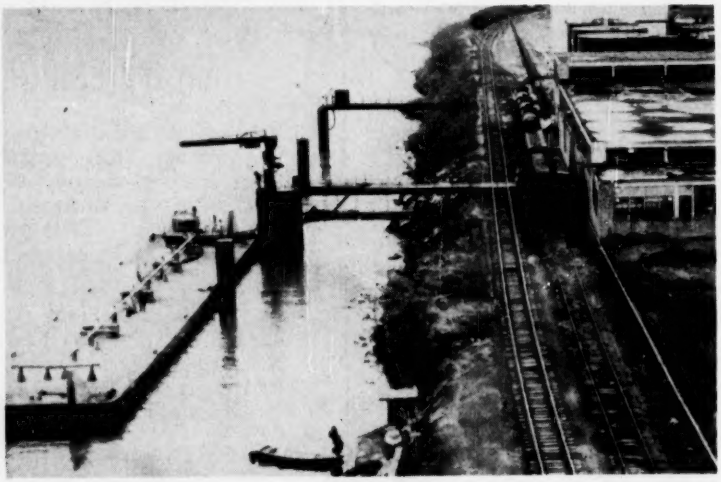
And in Canada, railroads have received authorization for a 4% rate rise. The new Canadian rates represent a total hike of 11%; a 7% interim boost went into effect last year. Further increase of 4%, to yield the 15% requested by Canadian roads, is yet to be acted upon by the Board of Transport Commissioners.

The new U.S. rates, however, are not strictly across-the-board. Smaller increases were specified for many bulk commodities. Chemical shippers won lower boosts on potash, held to a 50¢/ton increase, and salt and phosphate rock, held to a 30¢/ton increase. Coal and coke shipments were increased a flat 10¢/ton, lignite, 5¢/ton. Agricultural and lumber products rates were similarly held down.

Further increases are extremely likely. Eastern and Western lines' requests for an additional 15% boost are pending. Southern lines are expected to ask for a 15% hike early this year, though some lines fear that a big rate increase would curtail Southern industrial development.

Trucks, too: Rails aren't the only carriers slated for substantial rate hikes. Common carriers providing service between the East and Central regions hope to increase charges 15% immediately following action by ICC on the railroads' request for 15%.

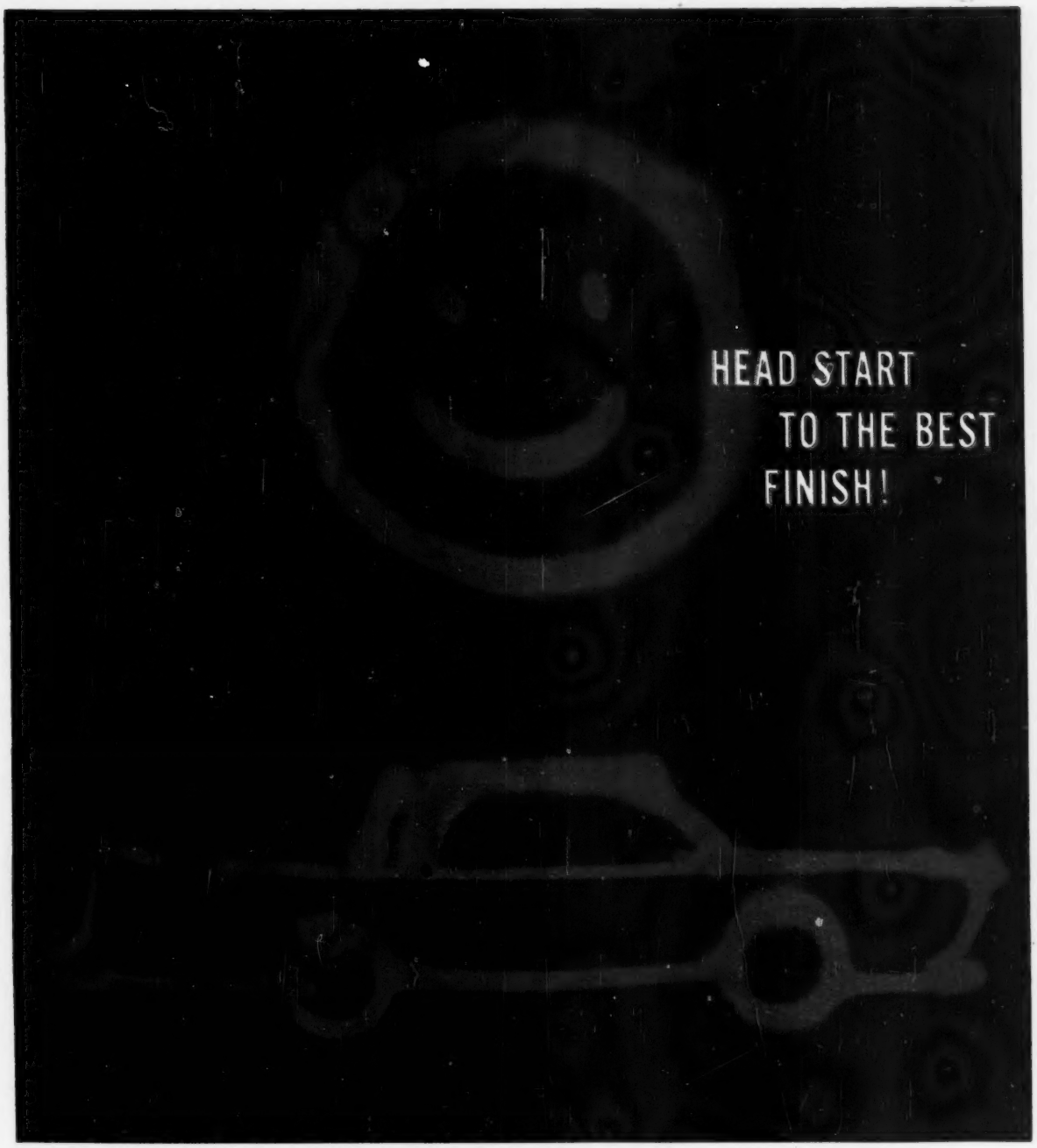
Meanwhile, shippers at a hearing this week appealed plans of the Central States Motor Freight Bureau to increase rates 10% in 12 Central states. Whatever the results, 1957 chemical shipping costs are certain to soar.



Add Two for Bulk Storage

DISTRIBUTION of perchlorethylene and sulfuric acid will be speeded by two new bulk-storage installations. Operated for Diamond Alkali, the new terminal (*above*) at McKees Rocks, Pa., will receive barge shipments of perchlorethylene, process it through a 225,000-gal. storage tank, a 15,000-gal. holding tank, drumming equipment and other supporting facilities. The terminal, first for perchlorethylene on the Ohio River, will service a 15-state area by tank car, tank truck and truckload shipment.

In New Haven, Conn., Monsanto Chemical has finished construction of bulk-storage capacity for 1,500 tons of 66-degree Baume sulfuric acid. It will be distributed by tank truck to the New York-New Haven area. The facility will obtain the acid by barge shipment from a plant at Everett, Mass.



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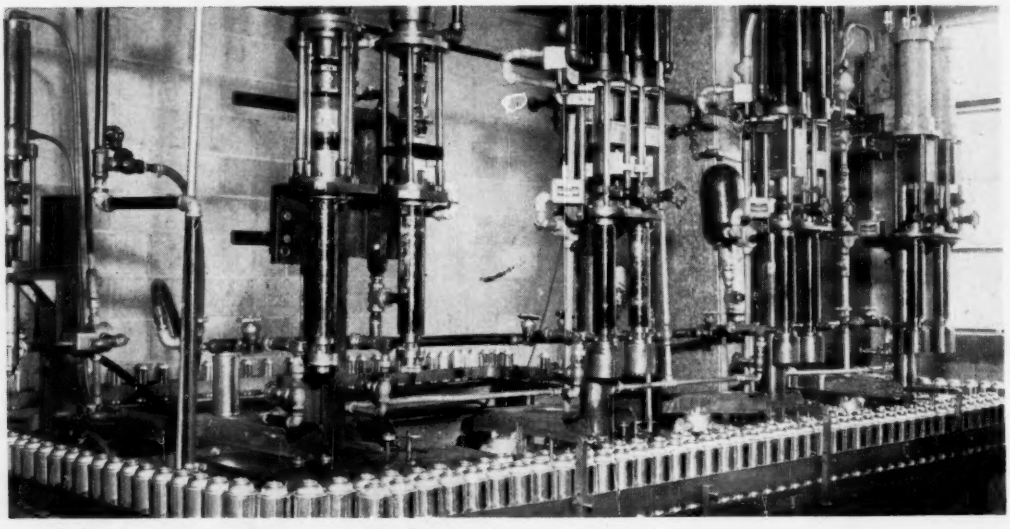

INDOORS: Production is on a three-shift basis as demand for Bon Ami aerosol grows.

A zooming new aerosol product and an unfamiliar new propellent put . . .

New Pressure on a Pressure Packager

There's nothing a contract aerosol filler would rather get hold of than a hot, new, big-volume item. Such a product is Jet Bon Ami (*CW, Aug. 4, p. 92*), the new pressure-packed window cleaner. And Continental Filling Corp. (Danville, Ill.) has a tight grip on the packaging contract.

But more than once the past year, Continental has felt as if it had a runaway horse by the tail. Bon Ami's fast-working promoters created so big a demand so quickly that Continental —and its suppliers—had to keep operating one step ahead of abuilding facilities. In fact, for one four-week period, Continental was using an outdoor filling line while a building was being constructed around it.

Bon Ami is about the first high-volume aerosol item to be propelled with butane. And this makes Continental one of the first high-volume butane fillers. Although butane fills at the same pressure as some of the fluorinated gases, it creates production problems because of its flammable na-

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SPECIALTIES

ture. Continental was able to fill pilot-plant quantities by converting a regular filling line at the Hobart, Ind., plant, but a new exhaust system and sparkproof equipment were needed to make such filling perfectly safe. (Despite filling hazards, the finished, water-based product is virtually hazard-free.)

Makeshift: Continental made a test run on its improvised line on March 22, '56, to meet preliminary test market requirements of what was then Bon Ami's Aerosol Window Cleaner. There were several more small runs in April, to provide cans for introduction that month to test markets in Richmond, Va., Syracuse, N.Y. and Harrisburg, Pa.). But test-marketing had hardly begun when the decision was made to go national as soon as possible. Reasons:

- Early sales were spectacular.
- Bon Ami wanted to be in as many markets as possible in time for the big fall season.
- The firm was under new management—United Dye and Chemical Corp. had bought control.

By late June, Continental was preparing to go into full-scale production so as to allow an August introduction in New York, but was fearful of the hazards of the temporary line. Plans were under way to build a new flameproof building with a high-capacity, explosion-proof filling line. Just before construction started, however, the fears were realized. One evening, while the production line was being flushed to get the butane out of the building for the night the propellent caught fire. The flames were entirely outside the building, and no damage resulted, but Continental, once burned and doubly cautious, decided to get the line out of the main building at any cost.

The old line was shut down June 28. A quick-curing concrete slab was poured for the floor of the new building on June 30. Eight hours after it was poured, men started to move the old filling units and set them up on this new floor. By July 12, the line had been put into production again; and when the contractor arrived to put up the new building's sidewalls, he found, to his surprise, women on the line, busily turning out cans of Jet Bon Ami.

Fast Mover: At the same time, Bon Ami sales were moving fast. The product was introduced to New York in August, to the rest of the East in mid-September. It had national distribution by the end of September. To keep pace, Continental was forced to double production each month from June to September. Though construction hasn't yet been completed, Continental has already spent between $90,000 and $100,000 for new facilities. It has gone to two and three shifts a day. Saturday and Sunday work are far from unusual.

Continental wasn't the only firm having trouble keeping up. Risdon Mfg. Co., supplier of a special valve for the new aerosol, wasn't able to maintain Continental's pace, often had to air express loads of valves to keep the filling lines going.

All concerned agree that it was worth the trouble. Jet Bon Ami is sturdily established in the lucrative ($11-12 million/year) glass-cleaner market. Well-established with it are Continental, Risdon, and the other suppliers who came through in a pinch.

PRODUCTS

Heat-Resistant Hardener: Smooth-On Mfg. Co. (Jersey City, N.J.) is now selling a hardener for epoxy resins designed for use in 400 F applications. The new material, Sonite No. 21, is an acid-anhydride curing agent, hardening epoxy compounds within one hour at 120 C, so that molds can be quickly reused.

•

Patcher: Chem Rubber-Fix is a new repair material for use on a number of rubber products such as tires, gloves, aprons, footwear. Special metal primers and rubber bonding cement improve adherence. Patch Rubber Co. (Akron, O.) makes the new material, which sells in 2-lb. kits for $6.60.

•

No Water: A new, waterless hand cleaner has been introduced by Rainbo Polish Products, Inc. (Elgin, Ill.). Packed in metal cans, the cleaner is said to contain ammoniated compounds that promote the healing of minor cuts and bruises.

•

By the Case: MRM Co., Inc. (New York), is now introducing a new machine that fills a variety of liquids in containers already in their shipping cases. Multiple head on the filling machine can be adapted to load 4, 6, 8,

12 and more units at one time—a rate of 2-6 cases/minute is possible.

•

Sterile Field: Stauffer Chemical Co. (New York) has been granted a patent dealing with its Vapam method of temporarily sterilizing soil (*CW, Sept. 8, p. 90*). Patent number is 2,766,554.

•

Popular Price: "Regular soap bar prices" is being stressed in promotion for the latest deodorant soap bar—Andrew Jergens Co.'s (Cincinnati) Woodbury soap. The product, containing Monsanto's bithionol, is now in national distribution. Also changed: the package—now a foil wrap. Price is still around the standard: 2 bars for 25¢.

•

Waterless Scrubbers: Efficiency of waterless hand cleaners and their dermatological effects were evaluated in recent tests by the U.S. Air Force. Some 15 commercially available products and four conventional compounds were tried out, and the report on their performance is available from the U.S. Dept. of Commerce, Office of Technical Service, Washington, D.C. Essence of the 62-page report ($1.75): the cleaners are satisfactory when conventional agents are unavailable, but are not satisfactory as across-the-board substitutes.

•

Protective Coating: A new protective coating from Rubber Magic, Inc. (Brooklyn, N.Y.), is said to be resistant to strong acids, salts, mild alkalis, alcohol, and some other corrosives. It adheres, the company says, to metal, wood and masonry. Designated RM-64, it is an "alloy" of plastic and synthetic rubber in latex form.

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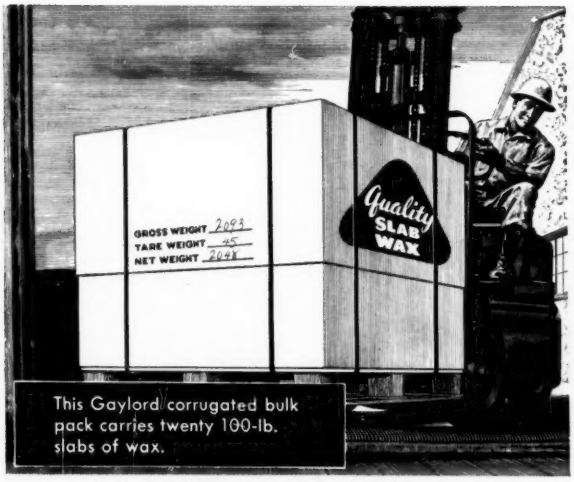

This Gaylord corrugated bulk pack carries twenty 100-lb. slabs of wax.

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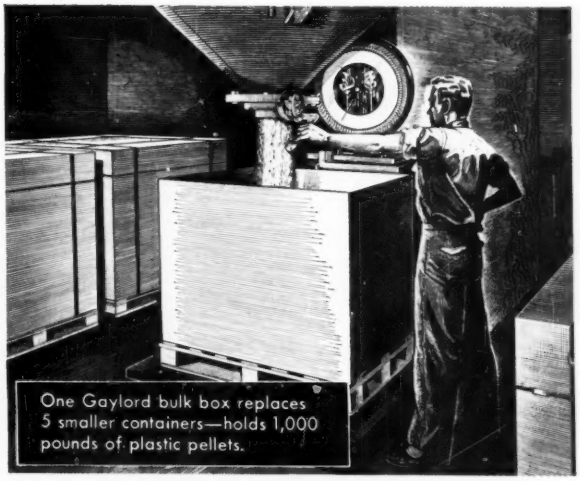

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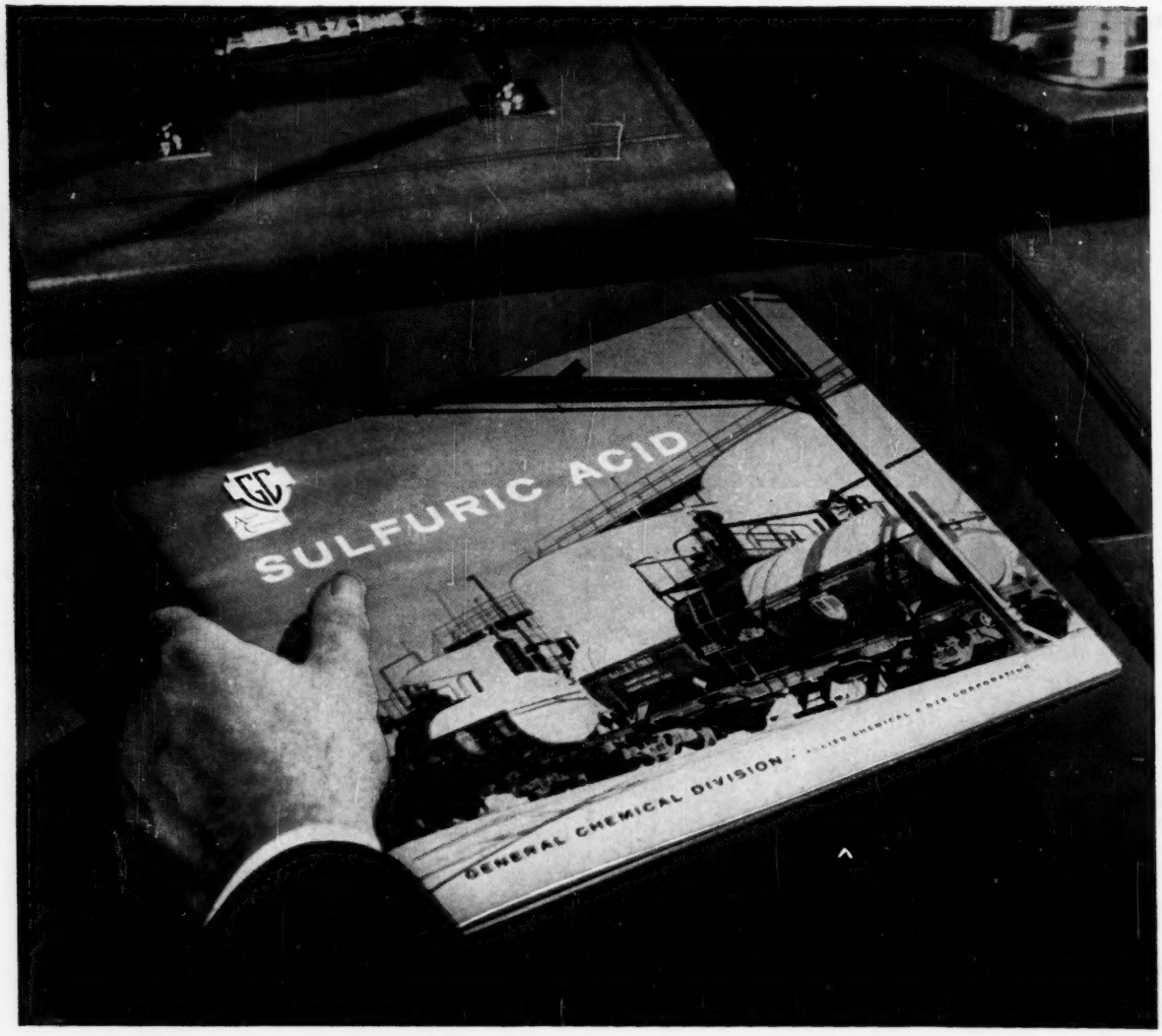

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